



RHODES UNIVERSITY, GRAHAMSTOWN, SOUTH AFRICA

STAFF INFORMATION



PROF JOHN MACK

Associate Professor - Research

CONTACT DETAILS:

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EDUCATION DETAILS:

Undergraduate:	1 st Oct 1984 - 30 th Jun 1988 Aberdeen University, Scotland B.Sc. in Chemistry (<i>First Class Honours</i>)
Postgraduate:	1 st Sep 1988 - 30 th Jun 1994 University of Western Ontario, Canada Ph.D. in Chemistry
Thesis:	MCD Spectroscopy of Phthalocyanine Anions (<i>Completed in June 1994 to fulfil requirements of Ph.D. degree</i>)

SCHOLARSHIPS AND AWARDS:

Undergraduate:	Coutts Prize for Chemistry in 1985-86 & 86-87. Forbes Prize for Physical Chemistry in 1987-88.
Postgraduate:	Ontario International Fee Waiver 1988-1994.
Research Funding:	Competitive Support for Unrated Researchers (CSUR) grant

National Research Foundation (NRF) from 2015-17
(Grant No: 93627)

China / South Africa Research Cooperation Programme
with Prof. Zhen Shen (Nanjing University) for 2015-16
(Grant No: 95421)

WORK EXPERIENCE:

Work Experience

1 st Jul 1994 - 31 st Mar 1997	Postdoctoral Fellow	University of Western Ontario (<i>Prof. Martin J. Stillman</i>)
1 st Apr 1997 - 31 st Mar 1999	Research Associate	University of Western Ontario (<i>Prof. Emeritus James R. Bolton</i>)
1 st Apr 1999 - 12 th Oct 2004	Research Associate	University of Western Ontario (<i>Prof. Martin J. Stillman</i>)
13 th Oct 2004 - 31 st Jul 2006	Centre of Excellence Fellow	Tohoku University (<i>Prof. Nagao Kobayashi</i>)
1 st Aug 2006 - 17 th Sep 2007	Research Associate	University of Western Ontario (<i>Prof. Martin J. Stillman</i>)
18 th Sep 2007 - 31 st Mar 2010	Assistant Professor	Tohoku University (<i>Prof. Nagao Kobayashi</i>)
1 st Apr 2010 - 31 st Mar 2012	Research Associate	Tohoku University (<i>Prof. Nagao Kobayashi</i>)
1 st Apr 2012 – 31 Dec 2019	Senior Researcher/ Nanotechnology Specialist	Rhodes University, Chemistry Dept, RU/DST Institute for Nanotechnology Innovation Direction: Prof T Nyokong
1 st Jan 2020 – date	Associate Professor - Research	Rhodes University, Chemistry Dept, RU/DST Institute for Nanotechnology Innovation Direction: Prof T Nyokong

RESEARCH EXPERIENCE:

Photophysics

During my time at Rhodes University I have gained considerable experience in the maintenance and operation of Ekspla NT 342B and Quanta-Ray Nd/YAG lasers and a Lambda Physic FL 3002 dye laser to carry out triplet state lifetime and quantum yield measurements and to calculate singlet oxygen quantum yields using an ultra-sensitive germanium detector (Edinburgh Instruments, EI-P) for phthalocyanines and porphyrins and their nanoparticle-conjugates. I have also supervised the use and maintenance of Picoquant Fluotime 200 and 300 fluorescence lifetime spectrometers and have carried out various fluorescence and phosphorescence measurements including both steady

state emission spectra and the lifetimes of singlet and triplet excited states. Studying the effect of different types of modification to the structure of porphyrinoid ligands and other types of dye molecule such as boron dipyrromethenes (BODIPYs) and their analogues on the observed Φ_F and Φ_{int} values is an obvious future research direction.

MCD spectroscopy

I have extensive experience in measuring and analyzing magnetic circular dichroism (MCD) spectra at both room and cryogenic temperatures. Although the MCD technique is somewhat specialized, it often provides key insights on the electronic structures of high symmetry heteroaromatic compounds, such as porphyrins and phthalocyanines, which are not readily available using other characterization methods. During my time at Tohoku University, my research largely focused on using Michl's perimeter model (a conceptual framework used to analyze the results of MO calculations of aromatic and heteroaromatic π -systems) to identify key trends in the electronic structures of structurally related porphyrinoid compounds which shape the optical and redox properties. I have also studied the MCD spectroscopy of hemes in the context of the iron-regulated surface determinant proteins of the *Staphylococcus aureus* hospital superbug to derive information about the spin state of the central ferrous or ferric ion and its coordination environment within the protein. The chemistry department at Rhodes University has purchased a Chirascan plus spectrodichrometer equipped with a 1 T (tesla) permanent magnet with a permanent magnet. I have recently assisted several postgraduate students at Rhodes University in the use of the MCD technique.

Theoretical calculations

I have carried out TD-DFT and INDO/s calculations on a wide range of porphyrinoids synthesized by over a dozen different research groups from around the world. Trends observed in the MCD spectra of structurally related porphyrinoids have been used to validate the theoretical descriptions of the electronic structures. One of my main research goals is to use molecular modelling and Michl's perimeter model to carry out the rational design and synthesis of novel porphyrinoids that are suitable for use in practical applications such as dye-sensitized solar cells and near-IR fluorescent dyes. Recent collaborative research on BODIPY and aza-BODIPY dyes with Prof. Zhen Shen of Nanjing University and Dr. Hua Lu of Hangzhou Normal University has provided an opportunity to apply insights derived from research on porphyrinoids to a wider range of dye molecules. During my time at Rhodes University, I have made extensive use of the sun cluster at the Centre for High Performance Computing in Cape Town and have instructed students how to carry out modelling calculations and analyze the results.

Electrochemistry

I have extensive experience in carrying out cyclic voltammetry and differential pulse voltammetry measurements. During my doctoral research in Prof. Martin Stillman's laboratory at the University of Western Ontario, I successfully designed cells which enabled CV and DPV measurements to be made under an inert atmosphere using a minimal amount of solution and supporting electrolyte. I also designed cells for use in the sample bore of a superconducting magnet to enable *in situ* spectroelectrochemical measurement of the MCD spectra of highly air-sensitive π -anion radical species. The redox properties of porphyrinoids

Photochemistry	<p>are an ongoing area of interest, since they are directly related to the same trends in the electronic structure that are also studied by optical spectroscopy and theoretical calculations, and also play a key role in determining whether porphyrinoids are suitable for practical applications.</p> <p>During my doctoral research, I also gained considerable experience in using photochemistry to generate highly air-sensitive porphyrinoid π-anion radical species <i>in vacuo</i> for spectroscopic measurements. I subsequently studied the spectroscopy of air stable π-anion radical species of porphyrinoids with novel structures, which result in marked decreases in the first reduction potential. These species could be used in artificial photosynthesis and catalysis applications. Currently, it is only the π-cation radicals of porphyrinoids that tend to be used in this context, since most π-anion radicals are highly air-sensitive. A key future research goal would be to use Michl's perimeter model and the trends predicted in TD-DFT calculations to carry out the rational design and synthesis of the phthalocyanine analogues which are best suited to this type of research.</p>
CD spectroscopy	<p>I wrote a book with Prof. Nagao Kobayashi of Tohoku University on the theory of CD and MCD spectroscopy and the quantitative analysis of the spectral data derived from these techniques, which was published by the Royal Society of Chemistry in 2011. I have carried out a limited amount of research on the CD spectroscopy of aza-BODIPY dyes and other optically active polymers and complexes. Many researchers find the quantitative approaches to the analysis of CD spectral data quite challenging, so there is scope for collaborative research in this regard.</p>
EPR spectroscopy	<p>I have considerable experience in measuring and analyzing the EPR spectra of air sensitive paramagnetic porphyrinoid radical species at both room and cryogenic temperatures, including experiments at <i>ca.</i> 4 K in which liquid helium was used as the coolant. My experience with several different specialist spectroscopic techniques could be readily applied to a wide range of projects in inorganic and bioinorganic chemistry. Since moving to Rhodes University, I have supervised the use of a Bruker EMX plus instrument by students.</p>
TOF-SIMS	<p>An ION-TOF TOF-SIMS 5 instrument was recently installed at the RU/DST Centre for Nanotechnology Innovation at Rhodes University. I have been trained in its use and maintenance by a technician from the company and will be involved in measuring samples and supervising students in the use of the instrument.</p>
XPS	<p>I have received training on the use of a Kratos Analytical Axis Ultra DLD XPS instrument and will be involved in the data analysis of samples.</p>
Software Development	<p>I have had extensive experience in developing in house software to carry out highly specialized types of data analysis related to MCD spectroscopy such as the simultaneous spectral band deconvolution analysis of UV-visible absorption and MCD spectra and deriving values for excited state magnetic moments from A_1/D_0 ratios. I also developed software to provide user interfaces, which enabled the remote control of Jasco and Cary spectrometers and a Princeton Applied Research potentiostat, prior</p>

to this type of software becoming commercially available. There is considerable scope for applying this experience in the present day based in the use of application macros.

Analytical Chemistry

In the late 1990s, I spent two years carrying out analytical chemistry research on the treatment of wastewaters using H₂O₂ and UV light. The research was largely funded by Calgon Carbon one of the leading companies in the field and involved close collaboration with an industrial R&D team. HPLC, GC, IC and colorimetric methods were used to monitor the progress of the wastewater treatments.

TEACHING EXPERIENCE:

Teaching Assistant

During my doctoral studies at the University of Western Ontario, I was involved on a twice weekly basis with laboratory courses for 2nd and 3rd year undergraduates. The primary focus in the 2nd year course was on the synthesis of inorganic compounds, while the 3rd year course focused on analytical chemistry with students provided hands on experience with IC, HPLC, GC and AAS equipment supplied by Varian. The experiments were geared towards the analysis of environmental samples and preparing students for careers in industry.

Postdoctoral Fellow

During my postdoctoral studies in Canada, I gained considerable experience in working closely with 4th year undergraduates during the course of research projects. The projects focused either on the synthesis and characterization of porphyrinoids and/or their paramagnetic anion and cation π radical species or on the analysis of the treatment of environmental contaminants, such as methyl tertiary butyl ether, in waste waters using H₂O₂ and UV light.

Assistant Professor

During my time at Tohoku University, I prepared a 2nd year inorganic chemistry course for international exchange students using Shriver & Atkins as the textbook. I delivered ten 90 minute lectures and set the examinations for the course. I also participated in a laboratory course designed to teach the basics of the synthesis and characterization of inorganic compounds to Japanese 2nd year undergraduates. I actively participated in weekly group seminars in Prof. Nagao Kobayashi's laboratory in which 3rd and 4th year undergraduates and M.Sc. and Ph.D. students present their results. I have gained considerable insight into how significant progress can be achieved in porphyrinoid research by carefully designing narrowly focused research projects for undergraduates, which can be completed in a relatively short timeframe.

Senior Researcher

I currently teach a fourteen lecture second year course on spectroscopy and analytical chemistry, an eight lecture third year course on photochemistry, and ten lecture honours modules on spectroscopic techniques and porphyrinoid chemistry in the Chemistry Department at Rhodes University. The goal of the honours modules is to introduce students to the theoretical background that underpins much of the research carried out at the RU/DST Centre for Nanotechnology Innovation. One honours student and four MSc students are currently

working on my projects on the synthesis, properties and applications of phthalocyanine and BODIPY dyes. I recently obtained a Competitive Support for Unrated Researchers (CSUR) grant for ca. R 0.8 million and a China / South Africa Research Cooperation Programme grant for R 0.2 million from the National Research Foundation (NRF) of South Africa to fund this research until the end of 2017.

PUBLICATIONS:

Books [1]

1. N. Kobayashi, A. Muranaka and J. Mack, "Circular Dichroism and Magnetic Circular Dichroism Spectroscopy for Organic Chemists", Royal Society of Chemistry, London, **2011**.
<http://www.rsc.org/shop/books/2011/9781847558695.asp>

Book Chapters [4]

1. J. Mack and M. J. Stillman, "Electronic Structure of Metal Phthalocyanine Complexes from the Analysis of the UV-Visible Absorption and Magnetic Circular Dichroism Spectra and Molecular Orbital Calculations", In "*The Porphyrin Handbook*", K. Kadish, K. Smith and R. Guilard, Eds., Academic Press, New York, **2002**, Vol. 16, Ch. 103, pp 43-116.
<http://www.sciencedirect.com/science/book/9780080923901>
2. J. Mack and M. J. Stillman, "Magnetic Circular Dichroism (and Magnetic Optical Rotatory Dispersion)", In "*Application of Physical Methods to Inorganic and Bioinorganic Chemistry*", R. A. Scott, C. M. Lukehart, Eds., John Wiley & Sons, New York, **2007**, 189-204.
<http://eu.wiley.com/WileyCDA/WileyTitle/productCd-0470032170.html>
3. J. Mack and N. Kobayashi, "Recent Applications of MCD Spectroscopy to Porphyrinoids", In "*Multiporphyrin Arrays*", D. Kim, Ed., Pan Stanford Publishing, Ghaziabad, India, **2011**, 91-147.
<http://www.panstanford.com/books/9789814316606.html>
4. J. Mack, N. Kobayashi, and Z. Shen, "The Effect of Structural Modifications on the Properties of Porphyrinoids", In "*Handbook of Porphyrin Science*", K. Kadish, K. Smith and R. Guilard, Eds., **2012**, World Scientific, Singapore, Vol. 23, Ch. 109, 281-371.
<http://www.worldscientific.com/series/porsci>

Reviews (published in peer-reviewed journals)

1. J. Mack and M. J. Stillman, "Assignment of the Optical Spectra of Metal Phthalocyanines through Spectral Band Deconvolution Analysis and ZINDO Calculations" *Coordination Chemistry Reviews* **2001**, 219-221, 993-1032. [http://dx.doi.org/10.1016/S0010-8545\(01\)00394-0](http://dx.doi.org/10.1016/S0010-8545(01)00394-0)
2. J. Mack, M. J. Stillman and N. Kobayashi, "Application of MCD spectroscopy to porphyrinoids" *Coordination Chemistry Reviews* **2007**, 251, 429-453. <http://dx.doi.org/10.1016/j.ccr.2006.05.011>
3. J. Mack and N. Kobayashi, "Low Symmetry Phthalocyanines and their Analogues", *Chemical Reviews* **2011**, 111, 281-321. <http://dx.doi.org/10.1021/cr9003049>
4. H. Lu, J. Mack, Y. Yang and Z. Shen, "Structural modification strategies for the rational design of Red/NIR region BODIPYs", *Chemical Society Reviews* **2014**, 43, 4778-4823.
<http://dx.doi.org/10.1039/c4cs00030g>
5. J. Mack, J. Stone and T. Nyokong, "Trends in the TD-DFT Calculations of Porphyrin and Phthalocyanine Analogues", *Journal of Porphyrins and Phthalocyanines* **2014**, 18, 630-641.

<http://dx.doi.org/10.1142/S108842461450045X>

6. L. Gai, H. Lu, Z. Li, J. Mack, T. Nyokong, Z. Shen and N. Kobayashi, "Fluorescent Chemosensors for Fluoride-Ion Based on Organosilicon Compounds", *Coordination Chemistry Reviews* **2015**, 285, 24-51. <http://dx.doi.org/10.1016/j.ccr.2014.10.009>
7. H. Lu, J. Mack, T. Nyokong, Z. Shen, and N. Kobayashi, "Optically Active BODIPYs", *Coordination Chemistry Reviews* **2016**, 318, 1-15. <http://dx.doi.org/10.1016/j.ccr.2016.03.015>

Research Papers (published in peer-reviewed journals)

8. J. Mack, S. Kirkby, E. A. Ough and M. J. Stillman, "Ground-State and Optical Spectrum of Metallophthalocyanine Radical Anions from Low-Temperature Magnetic Circular Dichroism Spectroscopy", *Inorganic Chemistry* **1992**, 31, 1717-1719. <http://dx.doi.org/10.1021/ic00035a037>
9. S. Radzki, J. Mack and M. J. Stillman, "Spectroelectrochemical and Photochemical Studies of Octaethylporphyrin Complexes. Magnetic Circular Dichroism Spectroscopy Studies of the Oxidation of Ce(IV) Octaethylporphyrin Sandwich Complexes", *New Journal of Chemistry* **1992**, 16, 583-589.
10. J. Mack and M. J. Stillman, "Photochemical Formation of the Anion Radical of Zinc Phthalocyanine and Analysis of the Absorption and Magnetic Circular Dichroism. Assignment of the Optical Spectrum of [ZnPc(π 3)]⁻", *Journal of the American Chemical Society* **1994**, 116, 1292-1304. <http://dx.doi.org/10.1021/ja00083a015>
11. J. Mack and M. J. Stillman, "Band Deconvolution Analysis of the Absorption and Magnetic Circular Dichroism Spectral Data of Zinc Phthalocyanine at Cryogenic Temperatures", *Journal of Physical Chemistry* **1995**, 95, 7935-7945. <http://dx.doi.org/10.1021/j100020a015>
12. J. Mack and M. J. Stillman, "Assignment of the Optical Spectra of Metal Phthalocyanine Anions", *Inorganic Chemistry* **1997**, 36, 413-425. <http://dx.doi.org/10.1021/ic960737i>
13. J. Mack, N. Kobayashi, C. C. Leznoff and M. J. Stillman, "Absorption and Magnetic Circular Dichroism Spectra, and Molecular Orbital Calculations of Tetrabenzotriazaporphyrins and Tetranaphotriazaporphyrins", *Inorganic Chemistry* **1997**, 36, 5624-5634. <http://dx.doi.org/10.1021/ic961389n>
14. J. Mack and J. R. Bolton, "Photochemistry of nitrite and nitrate in aqueous solution: a review", *Journal of Photochemistry and Photobiology A* **1999**, 128, 1-13. [http://dx.doi.org/10.1016/S1010-6030\(99\)00155-0](http://dx.doi.org/10.1016/S1010-6030(99)00155-0)
15. M. I. Stefan, J. Mack and J. R. Bolton, "Degradation Pathways during the Treatment of Methyl tert-Butyl Ether by the UV/H₂O₂ Process", *Environmental Science & Technology* **2000**, 34, 650-658. <http://dx.doi.org/10.1021/es9905748>
16. J. Mack and M. J. Stillman, "Transition Assignments in the Ultraviolet-Visible Absorption and Magnetic Circular Dichroism Spectra of Phthalocyanines", *Inorganic Chemistry* **2001**, 40, 812-814. <http://dx.doi.org/10.1021/ic0009829>
17. J. Mack and M. J. Stillman, "Assignment of the Optical Spectrum of Metal Porphyrin and Phthalocyanine Radical Anions", *Journal of Porphyrins and Phthalocyanines* **2001**, 5, 67-76. [http://dx.doi.org/10.1002/1099-1409\(200101\)5:1<67::AID-JPP300>3.0.CO;2-3](http://dx.doi.org/10.1002/1099-1409(200101)5:1<67::AID-JPP300>3.0.CO;2-3)
18. M. J. Stillman, J. Mack and N. Kobayashi, "Theoretical Aspects of the Spectroscopy of Phthalocyanines and Porphyrins", *Journal of Porphyrins and Phthalocyanines* **2002**, 6, 296-300. <http://dx.doi.org/10.1142/S108842460200035X>
19. N. Kobayashi, J. Mack, K. Ishii and M. J. Stillman, "Electronic Structure of Reduced Symmetry Peripheral Fused-Ring-Substituted Phthalocyanines", *Inorganic Chemistry* **2002**, 41, 5350-5363. <http://dx.doi.org/10.1021/ic011152d>

20. S. P. Keizer, J. Mack, B. Bench, S. Gorun and M. J. Stillman, "Electronic Structure and Spectroscopy of Electron Deficient Zinc Phthalocyanines", *Journal of the American Chemical Society* **2003**, *125*, 7067-7085. <http://dx.doi.org/10.1021/ja0299710>
21. J. Mack, C. L. Vermeiren, D. E. Heinrichs and M. J. Stillman, "In vivo heme scavenging by *Staphylococcus aureus* Isd C and Isd E proteins", *Biochemical and Biophysical Research Communications* **2004**, *320*, 781-787. <http://dx.doi.org/10.1016/j.bbrc.2004.06.025>
22. J. Mack, Y. Asano, N. Kobayashi and M. J. Stillman, "Application of MCD Spectroscopy and TD-DFT to a Highly Non-Planar Porphyrinoid Ring System. New Insights on Red Shifted Porphyrinoid Spectral Bands", *Journal of the American Chemical Society* **2005**, *127*, 17697-17711. <http://dx.doi.org/10.1021/ja0540728>
23. C. L. Vermeiren, M. Pluym, J. Mack, D. E. Heinrichs and M. J. Stillman, "Characterization of the Heme Binding Properties of *Staphylococcus aureus* IsdA", *Biochemistry* **2006**, *45*, 12867-12875. <http://dx.doi.org/10.1021/bi0607711>
24. J. Mack, N. Kobayashi and M. J. Stillman, "Magnetic Circular Dichroism spectroscopy and TD-DFT calculations of metal phthalocyanine anion and cation radical species", *Journal of Porphyrins and Phthalocyanines* **2006**, *10*, 1219-1237. <http://dx.doi.org/10.1142/S1088424606000594>
25. D. E. Heinrichs, J. Mack, M. Pluym, C. L. Vermeiren and M. J. Stillman, "Protoporphyrin IX and heme binding properties of *Staphylococcus aureus* Isd C", *Journal of Porphyrins and Phthalocyanines* **2007**, *11*, 165-171. <http://dx.doi.org/10.1142/S1088424607000217>
26. M. Pluym, C. L. Vermeiren, J. Mack, D. E. Heinrichs and M. J. Stillman, "Heme binding properties of *Staphylococcus aureus* Isd E", *Biochemistry* **2007**, *46*, 12777-12787. <http://dx.doi.org/10.1021/bi7009585>
27. J. Mack, Y. Asano, N. Kobayashi and M. J. Stillman, "Magnetic Circular Dichroism Spectroscopy of Cobalt Tetraphenyltetraacenaphthoporphyrin", *Journal of Inorganic Biochemistry* **2008**, *102*, 472-479. <http://dx.doi.org/10.1016/j.jinorgbio.2007.10.031>
28. J. Mack, M. Bunya, Y. Shimizu, H. Uoyama, N. Komobuchi, T. Okujima, H. Uno, S. Ito, M. J. Stillman, N. Ono and N. Kobayashi, "Application of MCD Spectroscopy and TD-DFT to Non-Planar Core Modified Tetrabenzoporphyrins. Effect of Reduced Symmetry on Non-Planar Porphyrinoids", *Chemistry - A European Journal* **2008**, *14*, 5001-5020. <http://dx.doi.org/10.1002/chem.200701611>
29. J. Mack, M. Bunya, D. Lansky, D. P. Goldberg and N. Kobayashi, "The MCD Spectroscopy of Corrolazines and Triazatetrabenzocorroles", *Heterocycles* **2008**, *76*, 1369-1380. [http://dx.doi.org/10.3987/COM-08-S\(N\)102](http://dx.doi.org/10.3987/COM-08-S(N)102)
30. Z.-L. Xue, Z. Shen, J. Mack, D. Kuzuhara, H. Yamada, T. Okujima, N. Ono, X.-Z. You and N. Kobayashi, "A Facile One-Pot Synthesis of meso-Aryl-Substituted [14]Triphyrin(2.1.1)", *Journal of the American Chemical Society* **2008**, *130*, 16478-16479. <http://dx.doi.org/10.1021/ja8068769>
31. D. Kuzuhara, J. Mack, H. Yamada, T. Okujima, N. Ono and N. Kobayashi, "Synthesis, Structures, and Optical and Electrochemical Properties of Benzoporphycenes", *Chemistry - A European Journal* **2009**, *15*, 10060-10069. <http://dx.doi.org/10.1002/chem.200900755>
32. W. Chidawanyika, J. Mack, S. Shimizu, N. Kobayashi and T. Nyokong, "Effect of peripheral fused ring substitution on the optical spectroscopy and electronic structure of metal phthalocyanine complexes", *Journal of Porphyrins and Phthalocyanines* **2009**, *13*, 1053-1062. <http://dx.doi.org/10.1142/S1088424609001339>
33. J. Mack, N. Kobayashi and M. J. Stillman, "Re-examination of the emission properties of alkoxy- and thioalkyl-substituted phthalocyanines", *Journal of Inorganic Biochemistry* **2010**, *102*, 472-479. <http://dx.doi.org/10.1016/j.jinorgbio.2009.09.018>

34. H. Lu, Z.-L. Xue, J. Mack, Z. Shen, X.-Z. You and N. Kobayashi, "Specific Cu²⁺-induced J-aggregation and Hg²⁺-induced fluorescence enhancement based on BODIPY", *Chemical Communications* **2010**, 46, 3565-3567. <http://dx.doi.org/10.1039/B926300D>
35. Z. Xue, J. Mack, H. Lu, L. Zhang, X.-Z. You, D. Kuzuhara, M. Stillman, H. Yamada, S. Yamauchi, N. Kobayashi and Z. Shen, "The Synthesis and Properties of Free-Base [14]Triphyrin(2.1.1) Compounds and the Formation of Subporphyrinoid Metal Complexes", *Chemistry - A European Journal* **2011**, 17, 4396-4407. <http://dx.doi.org/10.1002/chem.201003100>
36. H. Lu, S. Shimizu, J. Mack, X.-Z. You, Z. Shen and N. Kobayashi, "Synthesis and Spectroscopic Properties of Fused-Ring-Expanded Aza-BODIPYs", *Chemistry - An Asian Journal* **2011**, 6, 1026-1037. <http://dx.doi.org/10.1002/asia.201000641>
37. H.-J. Xu, J. Mack, A. B. Descalzo, Z. Shen, N. Kobayashi, X.-Z. You and K. Rurack, "meso-Aryl Phenanthroporphyrins, Synthesis and Spectroscopic Properties", *Chemistry - A European Journal* **2011**, 17, 8965-8983. <http://dx.doi.org/10.1002/chem.201002596>
38. T. Okujima, G. Jin, N. Matsumoto, J. Mack, S. Mori, D. Kuzuhara, C. Ando, N. Ono, H. Yamada, H. Uno and N. Kobayashi, "Cyclo[8]isoindoles: Ring-Expanded and Annelated Porphyrinoids", *Angewandte Chemie International Edition* **2011**, 50, 5699-5703. <http://dx.doi.org/10.1002/anie.201007510>
39. H. Lu, J. Mack, J. Lei, X.-Z. You, N. Kobayashi and Z. Shen, "Facile Hg²⁺ Detection in Water using Fluorescent Self-Assembled Monolayers of a Rhodamine-Based Turn-on Chemodosimeter formed via a "Click" Reaction", *Journal of Materials Chemistry* **2011**, 21, 10878-10882. <http://dx.doi.org/10.1039/C1JM11319D>
40. M. Tanaka, T. Ikeda, J. Mack, N. Kobayashi and T. Haino, "Self-Assembly and Gelation Behavior of Tris(phenylisoxazolyl)benzenes", *Journal of Organic Chemistry* **2011**, 76, 5082-5091. <http://dx.doi.org/10.1021/jo200766u>
41. W. Zhang, Y. Chang, F. Wu, J. Mack, N. Kobayashi and Z. Shen, "Synthesis, structure and spectroscopic properties of a porphycene-Re^I complex", *Journal of Porphyrins and Phthalocyanines* **2011**, 15, 622-631. <http://dx.doi.org/10.1142/S1088424611003549>
42. H. Liu, J. Mack, Q. Guo, N. Kobayashi and Z. Shen, "A selective colorimetric and fluorometric ammonium ion sensor based on the H-aggregation of an aza-BODIPY with fused pyrazine rings", *Chemical Communications* **2011**, 47, 12092-12094. <http://dx.doi.org/10.1039/C1CC15746A>
43. S. Sugawara, Y. Hirata, S. Kojima, Y. Yamamoto, E. Miyazaki, K. Takimiya, S. Matsukawa, D. Hashizume, J. Mack, N. Kobayashi, Z. Fu, K. M. Kadish, Y. M. Sung, K. S. Kim and D. Kim, "Synthesis, Characterization and Spectroscopic Analysis of Antiaromatic Benzofused Metalloporphyrin Species", *Chemistry - A European Journal* **2012**, 18, 3566-3581. <http://dx.doi.org/10.1002/chem.201101846>
44. S. Vancoillie, M. Hendrickx, M. T. Nguyen, K. Pierloot, A. Ceulemans, John Mack and Nagao Kobayashi, "Fourteen-Electron Ring Model and the Anomalous Magnetic Circular Dichroism of meso-Triarylsubporphyrins", *Journal of Physical Chemistry A*, **2012**, 116, 3960-3967. <http://dx.doi.org/10.1021/jp302623q>
45. J. Mack, K. Lobb, T. Nyokong, Z. Shen and N. Kobayashi, "Trends in the Optical and Redox Properties of Tetraphenyltetraphenanthroporphyrins", *Journal of Porphyrins and Phthalocyanines*, **2012**, 16, 833-844. <http://dx.doi.org/10.1142/S1088424612500885>
46. K. Wang, H. Wang, J. Mack, W. Li, N. Kobayashi and J. Jiang, "Chiral Phthalocyanine with Unambiguous Absolute Molecular Structures for Both Enantiomers", *Acta Chimica Sinica*, **2012**, 70, 1791-1797. <http://dx.doi.org/10.6023/A12050262>

47. K. Wang, D.-D. Qi, J. Mack, H.-L. Wang, W. Li, Y.-Z. Bian, N. Kobayashi and J. Jiang, "Fusing Phthalocyanine and Porphyrin Together: Unprecedented Co-planar Ring-Fused Diazaphthalocyaninato-porphyrin Dimers", *Chinese Journal of Inorganic Chemistry*, **2012**, *28*, 1779-1789.
http://www.wjhxxb.cn/wjhxxbcn/ch/reader/create_pdf.aspx?file_no=20120901&flag=1&journal_id=wjhxxbcn&year_id=2012
48. M. Kon-no, J. Mack, N. Kobayashi, M. Suenaga, K. Yoza and T. Shinmyozu, "Synthesis, Optical Properties, and Electronic Structures of Fully Core-Modified Porphyrin Dications and Isophlorins", *Chemistry - A European Journal* **2012**, *18*, 13361-13371.
<http://dx.doi.org/10.1002/chem.201200776>
49. H. Xu, J. Mack, D. Wu, Z.-L. Xue, A. B. Descalzo, K. Rurack, N. Kobayashi and Z. Shen, "Synthesis and Properties of Fused-Ring-Expanded Porphyrins Core Modified with Group 16 Heteroatoms", *Chemistry - A European Journal*, **2012**, *18*, 16844-16867.
<http://dx.doi.org/10.1002/chem.201200956>
50. R. A. Bulgakov, N. A. Kuznetsova, O. V. Dolotova, L. I. Solovieva, J. Mack, W. J. U. Chidawanyika, O. L. Kaliya and T. Nyokong, "Synthesis and Photophysical Properties of Covalent Conjugates of Aqua Platinum(II) and Octacarboxy-substituted Zinc Phthalocyanine", *Journal of Porphyrins and Phthalocyanines* **2012**, *16*, 1217-1224. <http://dx.doi.org/10.1142/S1088424612501209>
51. J. Mack, L. Sosa-Vargas, S. J. Coles, G. J. Tizzard, I. Chambrier, A. N. Cammidge, M. J. Cook and N. Kobayashi, "Synthesis, Characterization, MCD Spectroscopy and TD-DFT Calculations of Copper Metallated Non-peripherally Substituted Octa-octyl Derivatives of Tetrabenzotriazaporphyrin, *cis* and *trans* Tetrabenzodiazaporphyrin, Tetrabenzomonoazaporphyrin and Tetrabenzoporphyrin", *Inorganic Chemistry*, **2012**, *51*, 12820-12833. <http://dx.doi.org/10.1021/ic301712h>
52. J. Mack, Y. Morita, S. Higashibayashi, H. Sakurai and N. Kobayashi, "Magnetic Circular Dichroism Spectroscopy and Electronic Structures of C_3 Symmetry Buckybowls", *Chemical Physics Letters* **2013**, *556*, 188-194. <http://dx.doi.org/10.1016/j.cplett.2012.11.042>
53. L. Gai, J. Mack, H. Lu, B. Zou, H. Liu and Z. Li, "A BODIPY fluorescent probe with selective response for hypochlorous acid and its application in cell imaging", *Sensors and Actuators B: Chemical* **2013**, *182*, 1-6. <http://dx.doi.org/10.1016/j.snb.2013.02.106>
54. P. Modisha, E. Antunes, J. Mack and T. Nyokong, "Improvement of the photophysical parameters of zinc octacarboxy phthalocyanine upon conjugation to magnetic nanoparticles", *International Journal of Nanoscience* **2013**, *12*, 1350010. <http://dx.doi.org/10.1142/S0219581X13500105>
55. J. Mack, L. Xu, T. V. Dubinina, L. G. Tomilova, T. Nyokong and N. Kobayashi, "MCD spectroscopy and TD-DFT calculations of a naphthalene-ring-bridged coplanar binuclear phthalocyanine dimer", *Journal of Porphyrins and Phthalocyanines* **2013**, *17*, 489-500.
<http://dx.doi.org/10.1142/S1088424613500259>
56. J. Mack, J. Nakamura, T. Okujima, H. Yamada, H. Uno and N. Kobayashi, "MCD spectroscopy and TD-DFT calculations of low-symmetry acenaphthoporphyrins with dual fluorescence", *Journal of Porphyrins and Phthalocyanines* **2013**, *17*, 996-1007.
<http://dx.doi.org/10.1142/S1088424613500727>
57. X. Qu, C. Li, H. Chen, J. Mack, Z. Guo and Z. Shen, "A red fluorescent turn-on probe for hydrogen sulfide and its application in living cells", *Chemical Communications* **2013**, *49*, 7510-7512.
<http://dx.doi.org/10.1039/C3CC44128H>
58. Q. Wang, J. Mack, H. Liu, G. Lai, H. Lu and Z. Li, "Synthesis, characterization and solid-state emission properties of arylsilyl-substituted pyrene derivatives", *Dyes and Pigments* **2013**, *99*, 771-778.
<http://dx.doi.org/10.1016/j.dyepig.2013.07.003>

59. T. Okujima, C. Ando, J. Mack, S. Mori, T. Nakae, H. Yamada, K. Ohara, N. Kobayashi and H. Uno, "Acenaphthylene-fused cyclo[8]pyrroles with intense NIR region absorption bands", *Chemistry – A European Journal* **2013**, *19*, 13970-13978. <http://dx.doi.org/10.1002/chem.201301294>
60. L. Gai, J. Mack, H. Lu, H. Yamada, G. Lai, Z. Li and Z. Shen, "Novel 2,6-styryl substituted BODIPY isomers: synthesis, photophysical properties and theoretical calculations", *Chemistry - A European Journal* **2014**, *20*, 1091-1102. <http://dx.doi.org/10.1002/chem.201303291>
61. H. Liu, H. Lu, J. Xu, Z. Liu, Z. Li, J. Mack and Z. Shen, "Boron-pyridyl-imino-isoindoline dyes: facile synthesis and photophysical properties", *Chemical Communications* **2014**, *50*, 1074-1076. <http://dx.doi.org/10.1039/C3CC48316A>
62. Y. Yilmaz, J. Mack, M. K. Şener, M. Sönmez and T. Nyokong, "Photophysicochemical Properties and TD-DFT Calculations of Novel Zinc and Platinum Phthalocyanines", *Journal of Photochemistry and Photobiology A* **2014**, *277*, 102-110. <http://dx.doi.org/10.1016/j.jphotochem.2013.12.010>
63. Y. Yilmaz, J. Mack, M. Sönmez and T. Nykong, "Photophysicochemical Properties and TD-DFT Calculations of a Novel Terminal Alkyne Substituted Metal Free Phthalocyanine", *Journal of Porphyrins and Phthalocyanines* **2014**, *18*, 251-258. <http://dx.doi.org/10.1142/S1088424613501241>
64. Y. Yilmaz, J. Mack, M. K. Şener, M. Sönmez and T. Nyokong, "Synthesis, Photophysicochemical Properties and TD-DFT Calculations of Tetrakis(2-Benzoyl-4-Chlorophenoxy) Phthalocyanines", *Journal of Porphyrins and Phthalocyanines* **2014**, *18*, 326-335. <http://dx.doi.org/10.1142/S1088424614500047>
65. J. Mack, T. Otaki, W. S. Durfee, N. Kobayashi and M. J. Stillman, "MCD spectroscopy and TD-DFT calculations of low symmetry subnaphthalocyanine analogues", *Journal of Inorganic Biochemistry* **2014**, *136*, 122-129. <http://dx.doi.org/10.1016/j.jinorgbio.2014.01.001>
66. X. Liang, J. Mack, L.-M. Zheng, Z. Shen and N. Kobayashi, "Phosphorus(V)-Corrole: Synthesis, Spectroscopic Properties, Theoretical Calculations and Potential Utility for In Vivo Applications in Living Cells", *Inorganic Chemistry* **2014**, *53*, 2797-2802. <http://dx.doi.org/10.1021/ic402347w>
67. Z. Zhou, Y. Chang, S. Shimizu, J. Mack, C. Schütt, R. Herges, N. Kobayashi and Z. Shen, "Core-Modified Rubyrins Embedded with Dithienylethene Moieties", *Angewandte Chemie International Edition* **2014**, *53*, 6563-6567. <http://dx.doi.org/10.1002/anie.201402711>
68. X.-S. Ke, Y. Chang, J.-Z. Chen, J. Tian, J. Mack, X. Cheng, Z. Shen and J.-L. Zhang, "Synthetic chlorophyll *d*, *f* analogues decipher the relative orientation of β -substituents on porphyrins", *Journal of the American Chemical Society* **2014**, *136*, 9598-9607. <http://dx.doi.org/10.1021/ja502729x>
69. K. E. Sekhosana, E. Amuhaya, J. Mack and T. Nyokong, "Optical nonlinearities and photophysicochemical behaviour of green and blue forms of lutetium bisphthalocyanines", *Journal of Materials Chemistry C* **2014**, *2*, 5431-5437. <http://dx.doi.org/10.1039/C4TC00505H>
70. Y. Deng, Y.-Y. Cheng, H. Liu, J. Mack, H. Lu and L.-G. Zhu, "Asymmetric aza-boron-dipyridomethenes with large Stokes shifts: synthesis and spectroscopic properties", *Tetrahedron Letters* **2014**, *55*, 3792-3796. <http://dx.doi.org/10.1016/j.tetlet.2014.05.066>
71. S. Maohu, T. Jiangwei, C. Mkhize, G. Kubheka, Z. Jinfeng, J. Mack, T. Nyokong and Z. Shen, "Synthesis, characterization and singlet oxygen photosensitizer properties of an octa-4-tert-butylphenoxy-substituted phosphorus (V) triazatetrabenzcorrole", *Journal of Porphyrins and Phthalocyanines* **2014**, *18*, 698-707. <http://dx.doi.org/10.1142/S1088424614500436>

72. B. Zou, H. Liu, J. Mack, S. Wang, J. Tian, H. Lu, Z. Li and Z. Shen, "A new aza-BODIPY based NIR region colorimetric and fluorescent chemodosimeter for fluoride", *RSC Advances* **2014**, *4*, 53864-53869. <http://dx.doi.org/10.1039/C4RA06416J>
73. J. Mack, M. Wildervanck and T. Nyokong, "TD-DFT Calculations and MCD spectroscopy of porphyrin and phthalocyanine analogues: rational design of photosensitizers for PDT and NIR region sensor applications", *Turkish Journal of Chemistry* **2014**, *38*, 1013-1026. <http://dx.doi.org/10.3906/kim-1406-32>
74. Z. Xue, Y. Wang, J. Mack, Z. Ou and W. Zhu, "Synthesis, characterization and electrochemistry of the manganese(II) complexes of meso-substituted [14]tripyrins(2.1.1)", *Chemistry – A European Journal* **2015**, *21*, 2045-2051. <http://dx.doi.org/10.1002/chem.201405135>
75. C. Mkhize, J. Britton, J. Mack and T. Nyokong, "Optical limiting and singlet oxygen generation properties of phosphorus triazatetrabenzcorroles", *Journal of Porphyrins and Phthalocyanines* **2015**, *19*, 192-204. <http://dx.doi.org/10.1142/S1088424614501065>
76. F. Wu, J. Liu, T. Komeda, J. Mack, Y. Chang, N. Kobayashi and Z. Shen, "The Observation of a Kondo Resonance when a Cu-tetrabenzocorrole molecule is adsorbed onto a Au(111) Surface", *Nature Communications* **2015**, *6*, 7547. <http://dx.doi.org/10.1038/ncomms8547>
77. X. Liang, L. Xu, J. Mack, J. Stone, T. Nyokong, M.-Z. Li, Y. Jiang and W.-H. Zhu, "Facile Synthesis, Spectroscopic and Electrochemical Properties, Theoretical Calculations of Amide-Tethered Xanthene-bridged Porphyrin Dimers", *Journal of Porphyrins and Phthalocyanines* **2015**, *19*, 819-829. <http://dx.doi.org/10.1142/S1088424615500492>
78. B. Zou, H. Lu, J. Tian, J. Mack, Z. Li and Z. Shen, "A BODIPY-based 'turn-on' fluorescent probe for tumor hypoxia imaging", *Chemical Communications* **2015**, *51*, 13389-13392. <http://dx.doi.org/10.1039/c5cc05139h>
79. B.-B. Wang, H. Zuo, J. Mack, P. Majumdar, T. Nyokong, K. S. Chan and Z. Shen, "Optical properties and electronic structures of axially-ligated group 9 porphyrins", *Journal of Porphyrins and Phthalocyanines* **2015**, *19*, 973-982. <http://dx.doi.org/10.1142/S108842461550073X>
80. P. Majumdar, J. Mack and T. Nyokong, "Synthesis, characterization and photophysical properties of an acenaphthalene fused-ring-expanded NIR absorbing aza-BODIPY dye", *RSC Advances* **2015**, *5*, 78253-78258. <http://dx.doi.org/10.1039/C5RA14916A>
81. W. Chen, J. Mack, G. Kubheka, T. Nyokong and Z. Shen, "Corrole-BODIPY Conjugates: Enhancing the Fluorescence and Phosphorescence Intensity of Corrole Complexes via Efficient Through Bond Energy Transfer", *RSC Advances* **2015**, *5*, 50962-50967. <http://dx.doi.org/10.1039/C5RA07250F>
82. G. N. Ngubeni, J. Britton, J. Mack, E. New, I. Hancox, M. Walker, T. Nyokong, T. S. Jones and S. Khene, "Spectroscopic and nonlinear optical properties of the four positional isomers of 4 α -(4-tert-butylphenoxy)phthalocyanine", *Journal of Materials Chemistry C* **2015**, *3*, 10705-10714. <http://dx.doi.org/10.1039/C5TC01601K>
83. Y. Jiang, M. Li, X. Liang, J. Mack, M. Wildervanck, T. Nyokong, M. Qin and W. Zhu, "Lipophilic M(Zn , Cu)-OC₅H₁₁)₈phthalocyanines (M = H₂ and Ni(II)): synthesis, electronic structure, and their utility for highly efficient carbonyl reductions", *Dalton Transactions* **2015**, *44*, 18237-18246. <http://dx.doi.org/10.1039/C5DT03256C>
84. T. T. Tasso, T. Furuyama, J. Mack, T. Nyokong and Nagao Kobayashi, "Synthesis and Photophysical Investigation of Tetraazaporphyrin Substituted with AIE-active Moieties", *European Journal of Inorganic Chemistry* **2015**, 5516-5522. <http://dx.doi.org/10.1002/ejic.201500726>

85. Z. Xue, Y. Wang, J. Mack, Y. Fang, Z. Ou, W. Zhu and K. M. Kadish, "Synthesis and Characterization of Palladium(II) Complexes of *meso*-Substituted [14]Tribenzotriphyrin(2.1.1)", *Inorganic Chemistry* **2015**, *54*, 11852-11858. <http://dx.doi.org/10.1021/acs.inorgchem.5b02093>
86. Mack, John; Mkhize, Scebi; Safonova, Evgeniya A.; Martynov, Alexander G.; Gorbunova, Yulia G.; Tsivadze, Aslan Yu.; Nyokong, Tebello
MCD spectroscopy and TD-DFT calculations of magnesium tetra-(15-crown-5-oxanthreno)-phthalocyanine
Journal of Porphyrins and Phthalocyanines (2016), 20, 505-513
DOI:10.1142/S1088424616500322
<http://www.worldscientific.com/doi/10.1142/S1088424616500322>
87. Managa, Muthumuni; Mack, John; Gonzalez-Lucasb, Daniel; Remiro-Buenamanana, Sonia; Tshangana, Charmaine; Cammidge, Andrew N.; Nyokong, Tebello
Photophysical properties of tetraphenylporphyrin-subphthalocyanine conjugates
Journal of Porphyrins and Phthalocyanines (2016), 20, 204-212
DOI:10.1142/S1088424615500959
<http://www.worldscientific.com/doi/10.1142/S1088424615500959>
88. Xu, Li; Huang, Tingting; Liang, Xu; Mack, John; Harris, Jessica; Nyokong, Tebello; Li, Minzhi; Zhu, Weihua
Spectroscopic investigations and theoretical calculations of DABCO induced xanthene bridged self-assembled zinc(II) porphyrin dimer
Journal of Porphyrins and Phthalocyanines (2016), 20, 647-655
DOI:10.1142/S1088424616500231
<http://www.worldscientific.com/doi/10.1142/S1088424616500231>
89. Lu, Hua; Mack, John; Nyokong, Tebello; Kobayashi, Nagao; Shen, Zhen
Optically active BODIPYs
Coordination Chemistry Reviews (2016), 318, 1-15
DOI:10.1016/j.ccr.2016.03.015
<http://linkinghub.elsevier.com/retrieve/pii/S0010854515301466>
90. Xue, Zhaoli; Wang, Yemei; Mack, John; Mkhize, Scebi; Nyokong, Tebello; Fang, Yuanyuan; Ou, Zhongping; Kadish, Karl M.
Synthesis, characterization and electrochemistry of rhodium(III) complexes of *meso*-substituted [14]tribenzotriphyrin(2.1.1)
RSC Advances (2016), 6, 41919-41926
DOI:10.1039/C6RA03028A
<http://xlink.rsc.org/?DOI=C6RA03028A>
91. Wu, Y., Gai, L., Xiao, X., Lu, H., Li, Z., Mack, J., Harris, J., Nyokong, T. & Shen, Z.
A Chiral Hemiporphyrizine Derivative: Synthesis and Chiroptical Properties.
Chemistry – An Asian Journal (2016), 11(15): 2113–2116.
DOI: 10.1002/asia.201600754
<http://dx.doi.org/10.1002/asia.201600754>
92. Yan, Yu; Wu, Fan; Qin, Jiawei; Xu, Haijun; Shi, Maohu; Zhou, Jingfeng; Mack, John; Fomo, Gertrude, Nyokong, Tebello and Shen, Zhen

Efficient energy transfer in ethynyl bridged corrole-BODIPY dyads

RSC Advances (2016), 6, 72852-72858

DOI:10.1039/C6RA12271J

<http://xlink.rsc.org/?DOI=C6RA12271J>

93. Okujima, Tetsuo; Mack, John; Nakamura, Jun; Kubheka, Gugu; Nyokong, Tebello; Zhu, Hua; omobuchi, Naoki; Ono, Noboru; Yamada, Hiroko; Uno, Hidemitsu and Nagao Kobayashi
Synthesis, Characterization, and Electronic Structures of Porphyrins Fused with Polycyclic Aromatic Ring Systems
Chemistry - A European Journal (2016), 22, 14730-14738
DOI:10.1002/chem.201602213
<http://onlinelibrary.wiley.com/doi/10.1002/chem.201602213/full>
94. Ikeuchi Takuro; Kobayashi Nagao; Kimura Mutsumi; Mack John and Nyokong Tebello
Aggregation Control of Robust Water-Soluble Zinc(II) Phthalocyanine-Based Photosensitizers
Langmuir, 2016, 32 (45), pp 11980–11985
DOI: 10.1021/acs.langmuir.6b03552
<http://pubs.acs.org/doi/abs/10.1021/acs.langmuir.6b03552>
95. Gugu Kubheka, Imran Uddin, Edith Amuhaya, John Mack and Tebello Nyokong
Synthesis and photophysical properties of BODIPY dye functionalized gold nanorods for use in antimicrobial photodynamic therapy
Journal of Porphyrins and Phthalocyanines 2016; 20: 1016–1024
DOI: 10.1142/S108842461650070X
<http://dx.doi.org/10.1142/S108842461650070X>
96. Gai, L., Chen, J., Zhao, Y., Mack, J., Lu, H. & Shen, Z.
Synthesis and properties of azulene-functionalized BODIPYs.
RSC Advances (2016), 6: 32124–32129
DOI: 10.1039/C6RA00743K
<http://dx.doi.org/10.1039/C6RA00743K>
97. Zhu, W., Huang, T., Qin, M., Li, M., Mack, J. & Liang, X.
Tuning the synthetic cobalt(III)corroles electroreductive catalyzed lindane dehalogenation reactivity through meso-substituents.
Journal of Electroanalytical Chemistry (2016), 774: 58–65.
DOI: 10.1016/j.jelechem.2016.05.009
<http://dx.doi.org/10.1016/j.jelechem.2016.05.009>
98. Shi, M., Zhao, Y., Xu, H., Mack, J., Yin, L., Wang, X. & Shen, Z.
Photoisomerization and optical properties of a subphthalocyanine–azobenzene–subphthalocyanine triad. **RSC Advances (2016), 6: 71199–71205.**
DOI: 10.1039/C6RA11452K
<http://dx.doi.org/10.1039/C6RA11452K>
99. Zhou, J., Gai, L., Zhou, Z., Mack, J., Xu, K., Zhao, J., Qiu, H., Chan, K.S. & Shen, Z.
Highly efficient near IR photosensitizers based-on Ir–C bonded porphyrin-aza-BODIPY conjugates.
RSC Advances (2016), 6: 72115–72120.
DOI: 10.1039/C6RA10131C

<http://dx.doi.org/10.1039/C6RA10131C>

100. Zhou, J., Gai, L., Zhou, Z., Yang, W., Mack, J., Xu, K., Zhao, J., Zhao, Y., Qiu, H., Chan, K.S. & Shen, Z.
Rational Design of Emissive NIR-Absorbing Chromophores: RhIII Porphyrin-Aza-BODIPY Conjugates with Orthogonal Metal–Carbon Bonds.
Chemistry A European Journal (2016), 22: 13201–13209
DOI: 10.1002/chem.201602670
<http://dx.doi.org/10.1002/chem.201602670>
101. Maohu Shi, John Mack, Luan Yin, Xiaoyong Wang and Zhen Shen
Photoisomerization and optical behavior study of a subphthalocyanine–bisazobenzene–subphthalocyanine triad with visible-light response†
Journal of Materials Chemistry C 2016, 4, 7783-7789
DOI: 10.1039/c6tc02750d
<http://pubs.rsc.org/en/Content/ArticleLanding/2016/TC/c6tc02750d#!divAbstract>
102. Jinfeng Zhou, Lizhi Gai, John Mack, Zhikuan Zhou, Hailin Qiu, Kin Shing Chan and Zhen Shen
Synthesis and photophysical properties of orthogonal rhodium(III)–carbon bonded porphyrin–aza-BODIPY conjugates†
Journal of Materials Chemistry C 2016, 4, 8422-8428
DOI: 10.1039/c6tc03130g
<http://pubs.rsc.org/en/Content/ArticleLanding/2016/TC/c6tc03130g>
103. Li, Minzhi; Niu, Yingjie; Zhu, Weihua; Mack, John; Fomo, Gertrude; Nyokong, Tebello; Liang, Xu
A2B type copper(III)corroles containing zero-to-five fluorine atoms: Synthesis, electronic structure and facile modulation of electrocatalyzed hydrogen evolution
Dyes and Pigments (2017), 137, 523-531.
DOI:10.1016/j.dyepig.2016.10.044
<http://dx.doi.org/10.1016/j.dyepig.2016.10.044>
104. Nwaji, Njemuwa; Oluwole, David O.; Mack, John; Louzada, Marcel; Khene, Samson; Britton, Jonathan; Nyokong, Tebello
Improved nonlinear optical behaviour of ball type indium(III) phthalocyanine linked to glutathione capped nanoparticles
Dyes and Pigments (2017), 140, 417-430
DOI:10.1016/j.dyepig.2017.01.066
<http://dx.doi.org/10.1016/j.dyepig.2017.01.066>
105. Martynov, Alexander G.; Mack, John; Ngoy, Bokolombe P.; Nyokong, Tebello; Gorbunova, Yulia G.; Tsivadze, Aslan Yu.
Electronic structure and NH-tautomerism of a novel metal-free phenanthroline-annelated phthalocyanine
Dyes and Pigments (2017) 140, 469–479
DOI: 10.1016/j.dyepig.2017.01.072
<http://dx.doi.org/10.1016/j.dyepig.2017.01.072>
106. Nwaji, Njemuwa; Mack, John; Britton, Jonathan; Nyokong, Tebello

Synthesis, photophysical and nonlinear optical properties of a series of ball-type phthalocyanines in solution and thin films

New Journal of Chemistry (2017), 41(5), 2020-2028

DOI:10.1039/C6NJ03662G

<http://pubs.rsc.org/en/content/articlehtml/2017/nj/c6nj03662g>

107. Li Min-Zhi, Zhu Wei-Hua, Mack John, Mkhize Scebi, Nyokong Tebello, Liang Xu
Synthesis and Electronic Structure of A2B Type Halogen Atoms Substituted H3-Triarylcorroles
Chinese Journal of Structural Chemistry 36 (3) (2017) 367–380

DOI:

<http://manu30.magtech.com.cn/jghx/EN/abstract/abstract1702.shtml#>

108. Niu, Yingjie; Li, Minzhi; Zhang, Qianchong; Zhu, Weihua; Mack, John; Fomo, Gertrude; Nyokong, Tebello; Liang, Xu
Halogen substituted A2B type Co(III)triarylcorroles: Synthesis, electronic structure and two step modulation of electrocatalyzed hydrogen evolution reactions
Dyes and Pigments (2017), 142, 416-428.

DOI:10.1016/j.dyepig.2017.02.049

<http://doi.org/10.1016/j.dyepig.2017.02.049>

109. Li, Minzhi; Zhang, Qian; Xu, Li; Zhu, Weihua; Mack, John; May, Aviwe K.; Nyokong, Tebello; Kobayashi, Nagao; Liang, Xu
Flexible Metal-Porphyrin Dimers (M=MnIII, CoII, NiII, CuI): Synthesis, Spectroscopy, Electrochemistry, Spectroelectrochemistry, and Theoretical Calculations

ChemPlusChem (2017), 82, 598-606

DOI:10.1002/cplu.201600475

<http://onlinelibrary.wiley.com/doi/10.1002/cplu.201600475/full>

110. Nwaji, Njemuwa; Jones, Benjamin; Mack, John; Oluwole, David O.; Nyokong, Tebello
Nonlinear optical dynamics of benzothiazole derivatized phthalocyanines in solution, thin films and when conjugated to nanoparticles

Journal of Photochemistry and Photobiology, A: Chemistry (2017), 346, 46-59.

DOI:10.1016/j.jphotochem.2017.05.042

<https://doi.org/10.1016/j.jphotochem.2017.05.042>

111. Zhang, Hui; Wu, Yanping; Fan, Minhui; Xiao, Xuqiong; Mack, John; Gugu Kubheka; Nyokong, Tebello; Lu, Hua

Aza boron-pyridyl-isoindoline analogues: synthesis and photophysical properties

New Journal of Chemistry (2017), 41, 5802-5807

DOI:10.1039/C7NJ00707H

<http://pubs.rsc.org/en/content/articlelanding/2017/nj/c7nj00707h#!divAbstract>

112. B. P. Ngoy, N. Molupe, J. Harris, G. Fomo, J. Mack, T. Nyokong
Photophysical Studies of 2,6-Dibrominated BODIPY Dyes Substituted with 4-Benzylloxystyryl Substituent

Journal of Porphyrins and Phthalocyanines, 21 (2017) 431–438

DOI: 10.1142/S1088424617500420

<https://doi.org/10.1142/S1088424617500420>

113. Xu Liang; Tingting Huang; Minzhi Li; John Mack; Martijn Wildervanck; Tebello Nyokong and Weihua Zhu
Highly Efficient C Cl Bond Cleavage and Unprecedented C C Bond Cleavage of Environmentally Toxic DDT through Molecular Electrochemical Catalysis
Applied Catalysis A, General, **545 (2017) 44-53**
DOI: 10.1016/j.apcata.2017.07.026
<https://doi.org/10.1016/j.apcata.2017.07.026>
114. Gugu Kubheka, John Mack, Nagao Kobayashi, Mitsumi Kimura and Tebello Nyokong
Optical limiting properties of 2,6-dibromo-3,5-distyrylBODIPY dyes at 532 nm
Journal of Porphyrins Phthalocyanines **21, 523-531(2017)**
DOI: 10.1142/S1088424617500511
<https://doi.org/10.1142/S1088424617500511>
115. Wen, Junxia; Yu, Baoqiu; Huang, Tingting; Mack, John; Wildervanck, Martijn; Nyokong, Tebello; Li, Minzhi; Zhu, Weihua; Liang, Xu
Enantioselective electrochemical carbon-chloride bond cleavage of hexachlorocyclohexanes (HCHs) catalyzed Mn(III)Cl-phthalocyanine
Journal of Electroanalytical Chemistry (2017), 803, 111-116
DOI:10.1016/j.jelechem.2017.09.020
<https://doi.org/10.1016/j.jelechem.2017.09.020>
116. Dube, Edith; Nwaji, Njemuwa; Oluwole, David O.; Mack, John; Nyokong, Tebello
Investigation of photophysicochemical properties of zinc phthalocyanines conjugated to metallic nanoparticles
Journal of Photochemistry and Photobiology, A: Chemistry (2017), 349, 148-161
DOI:10.1016/j.jphotochem.2017.09.020
<https://doi.org/10.1016/j.jphotochem.2017.09.020>
117. Kubheka, Gugu; Achadu, Ojodomo; Mack, John; Nyokong, Tebello
Optical limiting properties of 3,5-diphenyldibenzo-azaBODIPY at 532 nm
New Journal of Chemistry (2017), 41, 12319-12325
DOI:10.1039/C7NJ01503H
<http://pubs.rsc.org/en/content/articlehtml/2017/nj/c7nj01503h>
118. Harris, Jessica; Gai, Lizhi; Kubheka, Gugu; Mack, John; Nyokong, Tebello; Shen, Zhen
Optical Limiting Properties of 3,5-Dithienylenevinylene BODIPY Dyes at 532 nm
Chemistry - A European Journal (2017), 23, 14507-14514
DOI:10.1002/chem.201702503
<http://onlinelibrary.wiley.com/doi/10.1002/chem.201702503/abstract>
119. Pushpanandan, Poornenth; Maurya, Yogesh Kumar; Omagari, Toshihiro; Hirose, Ryuji; Ishida, Masatoshi; Mori, Shigeki; Yasutake, Yuhsuke; Fukatsu, Susumu; Mack, John; Nyokong, Tebello and Hiroyuki Furuta
Singly and doubly N-confused calix[4]phyrin organoplatinum(II) complexes as near-IR triplet sensitizers
Inorganic Chemistry (2017), 56, 12572-12580
DOI:10.1021/acs.inorgchem.7b02047
<http://pubs.acs.org/doi/abs/10.1021%2Facs.inorgchem.7b02047>

120. Njemuwa Nwaji, John Mack and Tebello Nyokong
4-Bis (4-aminophenoxy)phenoxy derivitized phthalocyanine conjugated to metallic nanoparticles: searching for enhanced optical limiting materials
New Journal Chemistry (2017) 41, 14351-14363
DOI: 10.1039/C7NJ02718D
<http://pubs.rsc.org/en/content/articlelanding/2017/nj/c7nj02718d#!divAbstract>
121. J Mack
Expanded, Contracted, and Isomeric Porphyrins: Theoretical Aspects
Chemical Reviews 2017, 117, 3444-3478
DOI: 10.1021/acs.chemrev.6b00568
<http://pubs.acs.org/doi/abs/10.1021/acs.chemrev.6b00568>
122. Y Wu, J Mack, X Xiao, Z Li, Z Shen and H Lu
N-bridged annulated BODIPYs: synthesis of highly fluorescent blue-shifted dyes
Chemistry – An Asian Journal 2017, 12, 2216-2220
DOI: 10.1002/asia.201700584
<http://onlinelibrary.wiley.com/doi/10.1002/asia.201700584/full>
123. Liang, Xu; Niu, Yingjie; Zhang, Qianchong; Mack, John; Yi, Xiaoyi; Hlatshwayo, Zweli; Nyokong, Tebello; Li, Minzhi; Zhu, Weihua
Cu(III)triarylcorroles with asymmetric push-pull meso-substitutions: tunable molecular electrochemically catalyzed hydrogen evolution
Dalton Transactions (2017), 46, 6912-6920.
DOI:10.1039/C7DT00716G
<http://pubs.rsc.org/en/content/articlehtml/2017/dt/c7dt00716g>
124. Xu Liang, Junjia Fang, Minzhi Li, Qiuyun Chen, John Mack, Nthabeleng Molupe, Tebello Nyokong and Weihua Zhua
Push–pull type manganese(III)corroles: Synthesis, electronic structures and tunable interactions with ctDNA
Journal of Porphyrins and Phthalocyanines 2017, 21, 751–758
DOI: 10.1142/S1088424617500778
<https://doi.org/10.1142/S1088424617500778>
125. A. K. Lebechi, T. Nyokong and J. Mack
BODIPY dye embedded electrospun polystyrene nanofibers for the photocatalytic degradation of Orange G in industrial wastewaters
Macroheterocycles 2017, 10(4-5), 460-466
DOI: 10.6060/mhc171143n
<https://macroheterocycles.isuct.ru/en/mhc171143n>
126. A May , J Stone, BP Ngoy, J Mack, T Nyokong, M Kimura and N Kobayashi,
Photophysical and optical limiting properties of a novel distyryl-BODIPY with fused crown ether moieties
Journal of Porphyrins and Phthalocyanines 21 (2017) 832-843
DOI: 10.1142/S1088424617500869
<https://doi.org/10.1142/S1088424617500869>
127. Kubheka, G., Sanusi, K., Nyokong, T. and Mack, J.
Optical limiting properties of 3,5-dipyrenylvinyleneBODIPY dyes at 532nm

Spectrochimica Acta. Part A, Molecular and Biomolecular Spectroscopy (2018), 191, 357-364

DOI: 10.1016/j.saa.2017.10.021

<https://doi.org/10.1016/j.saa.2017.10.021>

128. Nwaji, N., Mack, J. and Nyokong, T.
Photophysical and strong optical limiting properties of ball-type phthalocyanines dimers and their monomeric analogues
Journal of Photochemistry and Photobiology, A: Chemistry (2018) 73-85
DOI:10.1016/j.jphotochem.2017.10.045
<https://doi.org/10.1016/j.jphotochem.2017.10.045>
129. Idowu, M.A., Xego, S., Arslanoglu, Y., Mack, J., Antunes, E. and Nyokong, T.
Photophysicochemical behaviour and antimicrobial properties of monocarboxy Mg (II) and Al (III) phthalocyanine-magnetite conjugates
Spectrochimica Acta, Part A: Molecular and Biomolecular Spectroscopy (2018), 193, 407-414
DOI:10.1016/j.saa.2017.12.052
<https://doi.org/10.1016/j.saa.2017.12.052>
130. Ngoy, Bokolombe P.; Hlatshwayo, Zweli; Nwaji, Njemuwa; Fomo, Gertrude; Mack, John; Nyokong, Tebello
Photophysical and optical limiting properties at 532 nm of BODIPY dyes with p-benzyloxystyryl groups at the 3,5-positions
Journal of Porphyrins and Phthalocyanines (2018), 22(5), 413-422.
DOI:10.1142/S1088424617500857
<https://doi.org/10.1142/S1088424617500857>
131. Stone, Justin; Mack, John; Nyokong, Tebello; Kimura, Mitsumi; Kobayashi, Nagao
Photophysical properties of a novel styryl-BODIPY with a fused crown ether moiety
Journal of Porphyrins and Phthalocyanines (2018), 22(1/3), 1-9
DOI:10.1142/S1088424617500699
<https://doi.org/10.1142/S1088424617500699>
132. Abdurrahmanoglu, Saziye; Canlica, Mevluede; Mack, John; Nyokong, Tebello
Pyridone substituted phthalocyanines: Photophysico-chemical properties and TD-DFT calculations
Journal of Porphyrins and Phthalocyanines (2018), 22(1/3), 25-31
DOI:10.1142/S1088424617500730
<https://doi.org/10.1142/S1088424617500730>
133. Liang, Xu; Qin, Mingfeng; Zhou, Lin; Liu, Tingting; Li, Minzhi; Mack, John; Ndebele, Nobuhle; Nyokong, Tebello; Zhu, Weihua
Porphyrin dimers with a bridging chiral amide-bonded benzo-moiety: Influence of positional isomerism on the molecular chirality
Dyes and Pigments (2018), 154, 229-233
DOI:10.1016/j.dyepig.2018.02.043
<https://doi.org/10.1016/j.dyepig.2018.02.043>
134. Nwahara, Nnamdi; Nkhahle, Reitumetse; Ngoy, Bokolombe P.; Mack, John; Nyokong, Tebello
Synthesis and photophysical properties of BODIPY-decorated graphene quantum dot-phthalocyanine conjugates
New Journal of Chemistry (2018), 42(8), 6051-6061

DOI:10.1039/C8NJ00758F

<http://pubs.rsc.org/en/content/articlehtml/2018/nj/c8nj00758f>

135. Nwaji, Njemuwa; Mack, John; Nyokong, Tebello
Enhanced nonlinear optical response of benzothiazole substituted ball-type phthalocyanines in the presence of metallic nanoparticles
Optical Materials (2018), 82, 93-103
DOI:10.1016/j.optmat.2018.05.052
<https://doi.org/10.1016/j.optmat.2018.05.052>
136. Yuan, Xuemei; Li, Minzhi; Meng, Ting; Mack, John; Soy, Rodah; Nyokong, Tebello; Zhu, Weihua; Xu, Haijun; Liang, Xu
Core-modified rubeans with phenanthrene-fused pyrrole rings: Highly selective and tunable response to Hg²⁺ ions
Dyes and Pigments (2018), 158, 188-194
DOI:10.1016/j.dyepig.2018.05.045
<https://doi.org/10.1016/j.dyepig.2018.05.045>
137. Nwaji, Njemuwa; Dingiswayo, Somila; Mack, John; Nyokong, Tebello
Photophysical and enhanced nonlinear optical response in asymmetric benzothiazole substituted phthalocyanine covalently linked to semiconductor quantum dots
Spectrochimica Acta, Part A: Molecular and Biomolecular Spectroscopy (2018), 204, 629-639.
DOI:10.1016/j.saa.2018.06.098
<https://doi.org/10.1016/j.saa.2018.06.098>
138. Lebechi, Augustus K.; Gai, Lizhi; Shen, Zhen; Nyokong, Tebello; Mack, John
Electrospun 3,5-dithienylvinyleneBODIPY embedded polystyrene nanofibers for the photocatalytic degradation of azo dyes in industrial wastewaters
Journal of Porphyrins and Phthalocyanines (2018), 22(6), 501-508.
DOI:10.1142/S1088424618500360
<https://doi.org/10.1142/S1088424618500360>
139. Nwaji, Njemuwa; Mack, John; Nyokong, Tebello
An optical limiting study in aminophenoxy substituted phthalocyanine in the presence of semiconductor quantum dots
Journal of Luminescence (2018), 203, 247-256
DOI:10.1016/j.jlumin.2018.06.044
<https://doi.org/10.1016/j.jlumin.2018.06.044>
140. Dube, Edith; Nwaji, Njemuwa; Mack, John; Nyokong, Tebello
The photophysicochemical behavior of symmetric and asymmetric zinc phthalocyanines, surface assembled onto gold nanotriangles
New Journal of Chemistry (2018), 42(17), 14290-14299
DOI: 10.1039/c8nj02746c
<http://pubs.rsc.org/en/content/articlehtml/2018/nj/c8nj02746c>
141. Liang, Xu; Li, Minzhi; Mack, John; Lobb, Kevin; Zhu, Weihua
Iron(III)porphyrin electrocatalyzed enantioselective carbon-chloride bond cleavage of hexachlorocyclohexanes (HCHs): combined experimental investigation and theoretical calculations
Dalton Transactions (2018), 47(33), 11470-11476

DOI:10.1039/C8DT02510J

<https://pubs.rsc.org/en/content/articlehtml/2018/dt/c8dt02510j>

142. N Molupe, B Babu, DO Oluwole, E Prinsloo, J Mack and T Nyokong
The investigation of in vitro dark cytotoxicity and photodynamic therapy effect of a 2,6-dibromo-3,5-distyryl BODIPY dye encapsulated in Pluronic® F-127 micelles
Journal of Coordination Chemistry **2018** **71(21)**, 3444-3457
DOI: 10.1080/00958972.2018.1522536
<https://doi.org/10.1080/00958972.2018.1522536>
143. Liang, X., Luo, H., Lan, Y., Zhu, W., Mack, J., Hlatshwayo, Z., Nyokong, T. and Chen, Q.
 π -Extended BODIPY Analogues: Synthesis, Electronic Structure, Potential Utility for in vivo Imaging Applications and Cytotoxicity
Macroheterocycles **2018** **11(4)** 421-428
DOI: 10.6060/mhc181005I
Publisher: ISUCT
<https://macroheterocycles.isuct.ru/en/mhc181005I>
144. Liang, Xu; Li, Minzhi; Mack, John; Lobb, Kevin; Zhu, Weihua
Iron(III)porphyrin electrocatalyzed enantioselective carbon-chloride bond cleavage of hexachlorocyclohexanes (HCHs): combined experimental investigation and theoretical calculations
Dalton Transactions (2018), **47(33)**, 11470-11476
DOI:10.1039/C8DT02510J
<https://pubs.rsc.org/en/content/articlehtml/2018/dt/c8dt02510j>
145. Ngoy, B.P., May, A.K., Mack, J. and Nyokong, T.
Effect of bromination on the optical limiting properties at 532 nm of BODIPY dyes with p-benzyloxystyryl groups at the 3,5-positions
Journal of Molecular Structure (2019), **1175**, 745-753
DOI:10.1016/j.molstruc.2018.08.012
<https://doi.org/10.1016/j.molstruc.2018.08.012>
146. Nnaji N., Nwaji N., Mack J. and Nyokong, T.
Corrosion Resistance of Aluminum against Acid Activation: Impact of Benzothiazole-Substituted Gallium Phthalocyanine
Molecules (2019), **24(1)**, 207/1-207/22
DOI: 10.3390/molecules24010207
<https://www.mdpi.com/1420-3049/24/1/207>
147. Ndebele, N., Mack, J. and Nyokong, T.
A 3,5-DistyrylBODIPY Dye Functionalized with Boronic Acid Groups for Direct Electrochemical Glucose Sensing
Electroanalysis (2019), **31**,137-145
DOI:10.1002/elan.201800651
<https://doi.org/10.1002/elan.201800651>
148. Babu, B., Amuhaya, E., Oluwole, D., Prinsloo, E., Mack, J. and Nyokong, T.
Preparation of NIR absorbing axial substituted tin(IV) porphyrins and their photocytotoxic properties
MedChemComm (2019), **10(1)**, 41-48

DOI: 10.1039/c8md00373d

<https://pubs.rsc.org/en/content/articlehtml/2019/md/c8md00373d>

149. R Soy, B Babu, D Oluwole, N Nwaji, J Oyim, E Amuhaya, E Prinsloo, J Mack and T Nyokong
Photophysical properties and photodynamic therapy activity of chloroindium(III) tetraarylporphyrins and their gold nanoparticle conjugates
Journal of Porphyrins and Phthalocyanines (2019) 23, 34-45
DOI: 10.1142/S1088424618501146
<https://doi.org/10.1142/S1088424618501146>
150. Matshitse, Refilwe; Ngoy, Bokolombe P.; Managa, Muthumuni; Mack, John; Nyokong, Tebello
Photophysical properties and photodynamic therapy activities of detonated nanodiamonds-BODIPY-phthalocyanines nanoassemblies
Photodiagnosis and Photodynamic Therapy (2019), 26, 101-110
DOI:10.1016/j.pdpdt.2019.03.007
<https://doi.org/10.1016/j.pdpdt.2019.03.007>
151. Harris, Jessica; May, Aviwe K.; Ngoy, Bokolombe P.; Mack, John; Nyokong, Tebello
An analysis of the photophysical and optical limiting properties of a novel 1,3,5-tristyrylBODIPY dye
Journal of Porphyrins and Phthalocyanines (2019), 23(1/2), 63-75
This paper is part of the 2019 Women in Porphyrin Science special issue.
DOI:10.1142/S1088424619500019
<https://doi.org/10.1142/S1088424619500019>
152. Martynov, Alexander G.; Mack, John; May, Aviwe K.; Nyokong, Tebello; Gorbunova, Yulia G.; Tsivadze, Aslan Yu
Methodological Survey of Simplified TD-DFT Methods for Fast and Accurate Interpretation of UV-Vis-NIR Spectra of Phthalocyanines
ACS Omega (2019), 4(4), 7265-7284
DOI:10.1021/acsomega.8b03500
<https://pubs.acs.org/doi/abs/10.1021/acsomega.8b03500>
153. Nnaji, Nnaemeka; Nwaji, Njemuwa; Fomo, Gertrude; Mack, John; Nyokong, Tebello
Inhibition of Aluminium Corrosion Using Benzothiazole and Its Phthalocyanine Derivative
Electrocatalysis (2019), 10(4), 445-458
DOI:10.1007/s12678-019-00538-1
<https://doi.org/10.1007/s12678-019-00538-1>
154. Ndebele, Nobuhle; Hlatshwayo, Zweli; Ngoy, Bokolombe P.; Kubheka, Gugu; Mack, John; Nyokong, Tebello
Optical limiting properties of BODIPY dyes substituted with styryl or vinylene groups on the nanosecond timescale
Journal of Porphyrins and Phthalocyanines (2019), 23(7/8), 701-717
DOI:10.1142/S108842461930009X
<https://doi.org/10.1142/S108842461930009X>
156. Majeed, Shereen A.; Nwaji, Njemuwa; Mack, John; Nyokong, Tebello; Makhseed, Saad
Nonlinear optical responses of carbazole-substituted phthalocyanines conjugated to graphene quantum dots and in thin films
Journal of Luminescence (2019), 213, 88-97

DOI:10.1016/j.jlumin.2019.04.034

<https://doi.org/10.1016/j.jlumin.2019.04.034>

157. Zhu, Weihua; Haider, Syed Najeeb-uz-Zaman; Zhang, Honglin; Attatsi, Isaac Kwaku; Mack, John; Dingiswayo, Somila; Nyokong, Tebello; Song, Yuting; Xu, Haijun; Liang, Xu
Synthesis and properties of chiral amide-bonded porphyrin dimers with various functional bridging blocks
Dyes and Pigments (2019), 171, 107740 1-6
DOI:10.1016/j.dyepig.2019.107740
<https://doi.org/10.1016/j.dyepig.2019.107740>
158. Liang, Xu; Qin, Mingfeng; Zhang, Xiaomei; Mack, John; Soy, Rodah C.; Nyokong, Tebello; Zhu, Weihua
Chiral Modulation from Molecular to Macroscopic levels by synthetic chiral-amide-bonded porphyrin dimers
Dyes and Pigments (2019), 171, 107637 1-7
DOI:10.1016/j.dyepig.2019.107637
<https://doi.org/10.1016/j.dyepig.2019.107637>
159. Bokolombe P. Ngoy, Aviwe K. May, John Mack and Tebello Nyokong
Optical Limiting and Femtosecond Pump-Probe Transient Absorbance Properties of a 3,5-distyrylBODIPY Dye
Frontiers in Chemistry (2019) 7, 740 1-9
doi: 10.3389/fchem.2019.00740
<https://doi.org/10.3389/fchem.2019.00740>
160. Kelechi A. Lebechi, Bokolombe P. Ngoy, John Mack and Tebello Nyokong
2,6-Dibrominated 3,5-DistyrylBODIPYs as Photosensitizer Dyes for Photodynamic Antimicrobial Chemotherapy
Macroheterocycles 2019 12(3) 292-299
DOI: 10.6060/mhc190662m
<https://macroheterocycles.isuct.ru/en/mhc190662m>
161. Balaji Babu, Earl Prinsloo, John Mack and Tebello Nyokong
Synthesis, characterization and photodynamic activity of Sn(IV) triarylcorroles with red-shifted Q bands
New Journal of Chemistry (2019) 43, 18805-18812
DOI: 10.1039/C9NJ03391B
<https://pubs.rsc.org/en/content/articlehtml/2019/nj/c9nj03391b>
162. Nthabeleng Molupe, Balaji Babu, Earl Prinsloo, Abdessamad Y.A. Kaassis, Katharina Ekins, John Mack and Tebello Nyokong
Photodynamic activity of Sn(IV) meso-tetraacenaphthylporphyrin and its methyl- β -cyclodextrin inclusion complexes on MCF-7 breast cancer cells
Journal of Porphyrins and Phthalocyanines (2019) 23 1486–1494
DOI: 10.1142/S1088424619501633
<https://doi.org/10.1142/S1088424619501633>
163. Molupe, Nthabeleng; Babu, Balaji; Oluwole, David O.; Prinsloo, Earl; Gai, Lizhi; Shen, Zhen; Mack, John; Nyokong, Tebello

Photodynamic activity of 2,6-diiodo-3,5-dithienylvinyleneBODIPYs and their folate-functionalized chitosancoated Pluronic F-127 micelles on MCF-7 breast cancer cells

Journal of Porphyrins and Phthalocyanines (2020), 24, 973-984

DOI:10.1142/s1088424619501773

<https://doi.org/10.1142/S1088424619501773>

164. Sen, Pinar; Mpeteta, Lekhetho S.; Mack, John; Nyokong, Tebello

New difluoroboron complexes based on N,O-chelated Schiff base ligands: Synthesis, characterization, DFT calculations and photophysical and electrochemical properties

Journal of Luminescence (2020), 224, 117262 (1-10)

DOI:10.1016/j.jlumin.2020.117262

<https://doi.org/10.1016/j.jlumin.2020.117262>

165. May, Aviwe; Majumdar, Poulomi; Martynov, Alexander G.; Lapkina, Lyudmila A.; Troyanov, Sergey I.; Gorbunova, Yulia G.; Tsivadze, Aslan Yu.; Mack, John; Nyokong, Tebello

Optical limiting properties, structure and simplified TD-DFT calculations of scandium tetra-15-crown-5 phthalocyaninates

Journal of Porphyrins and Phthalocyanines (2020), 24, 589-601

DOI:10.1142/S108842462050011X

<https://doi.org/10.1142/S108842462050011X>

166. Zhang, Xifeng; Wang, Yu; Zhu, Weihua; Mack, John; Soy, Rodah C.; Nyokong, Tebello; Liang, Xu
Meso- and axially-modified Ir(III)triarylcorroles with tunable electrocatalytic properties

Dyes and Pigments (2020), 175, 108124 (1-7)

DOI:10.1016/j.dyepig.2019.108124

<https://doi.org/10.1016/j.dyepig.2019.108124>

167. Balaji Babu, Rodah C. Soy, John Mack and Tebello Nyokong

Non-aggregated lipophilic water-soluble tin porphyrins as photosensitizers for photodynamic therapy and photodynamic antimicrobial chemotherapy

New Journal of Chemistry 44 (2020) 11006-11012

DOI: 10.1039/D0NJ01564D

<https://pubs.rsc.org/en/content/articlehtml/2020/nj/d0nj01564d>

168. Babu, Balaji; Mack, John; Nyokong, Tebello

An octabrominated Sn(IV) tetraisopropylporphyrin as a photosensitizer dye for singlet oxygen biomedical applications

Dalton Transactions (2020), 49, 9568-9573

DOI:10.1039/d0dt01915a

<https://pubs.rsc.org/en/content/articlelanding/2020/dt/d0dt01915a#!divAbstract>

169. Gugu Kubheka, John Mack, , Tebello Nyokong and Zhen Shen

NIR Absorbing AzaBODIPY Dyes for pH Sensing

Molecules 2020, 25, 3689 (1-14)

DOI: 10.3390/molecules25163689

<https://doi.org/10.3390/molecules25163689>

170. Aviwe May, John Mack and Tebello Nyokong

Optical limiting properties of D- π -A BODIPY dyes in the presence and absence of methyl groups at the 1,7-positions

Journal of Porphyrins and Phthalocyanines (2020) 24, 1129-1137

DOI: 10.1142/S1088424620500315
<https://doi.org/10.1142/S1088424620500315>

171. Somila Dingiswayo, Balaji Babu, Earl Prinsloo, John Mack and Tebello Nyokong
A comparative study of the photophysicochemical and photodynamic activity properties of meso-4-methylthiophenyl functionalized Sn(IV) tetraarylporphyrins and triarylcorroles
Journal of Porphyrins and Phthalocyanines (2020) 24, 1138–1145
DOI: 10.1142/S1088424620500273
<https://doi.org/10.1142/S1088424620500273>
172. Wei Tang, Yuanyuan Qiu, Xiaonan Li, Rodah C. Soy, John Mack, Tebello Nyokong and Xu Liang
pH-Dependent Electrochemically Catalyzed Oxygen Reduction Behaviors of o-Substituted Co(III) Corroles
Macroheterocycles 2020 13 (2) 156-162
DOI: 10.6060/mhc200183I
<https://macroheterocycles.isuct.ru/en/mhc200183I>
173. H. Uno, K. Muramatsu, S. Hiraoka, H. Tahara, M. Hirose, E. Tamura, T. Shiraishi, J. Mack, N. Kobayashi, S. Mori, T. Okujima, M. Takase
Synthesis and Aromaticity of Benzene-Fused Doubly N-Confused Porphyrins
Chemistry – A European Journal 2020, 26, 5701-5708
DOI: 10.1002/chem.202000339
<http://dx.doi.org/10.1002/chem.202000339>
174. Babu, Balaji; Mack, John; Nyokong, Tebello
Sn(IV) N-confused porphyrins as photosensitizer dyes for photodynamic therapy in the near IR region
Dalton Transactions, 2020, 49, 15180 – 15183
DOI: 10.1039/D0DT03296D
<https://doi.org/10.1039/D0DT03296D>
175. Balaji Babu, Thaslima Asraf Ali, Thivagar Ochappan, John Mack, Tebello Nyokong, Mathur Gopalakrishnan Sethuraman
Photocytotoxicity of heavy-atom-free thiobarbituric acid functionalized pyrene derivatives against MCF-7 cancer cells
Photodiagnosis and Photodynamic Therapy 33 (2021) 102102 (1-6)
DOI: 10.1016/j.pdpdt.2020.102102
<https://doi.org/10.1016/j.pdpdt.2020.102102>
176. Balaji Babu, Azole Sindelo, John Mack, Tebello Nyokong
Thien-2-yl substituted chlorins as photosensitizers for photodynamic therapy and photodynamic antimicrobial chemotherapy
Dyes and Pigments, 185 (2021) 10886 (1-8)
DOI: 10.1016/j.dyepig.2020.108886
<https://doi.org/10.1016/j.dyepig.2020.108886>
177. Mingfeng Qin, , Zhen Zhang, Weihua Zhu, John Mack, Rodah C. Soy, Tebello Nyokong and Xu Liang
Modulation of the optical properties of chiral porphyrin dimers by introducing bridged chiral amide-bonds
Journal of Porphyrins and Phthalocyanines (2021), 25, 37-46

DOI: 10.1142/S1088424620500492
<https://doi.org/10.1142/S1088424620500492>

178. Gugu Kubheka, Balaji Babu, Earl Prinsloo, Nagao Kobayashi, John Mack and Tebello Nyokong
Photodynamic activity of 2,6-dibrominated dimethylaminophenylbuta-1,3-dienylBODIPY dyes
Journal of Porphyrins and Phthalocyanines (2021), 25, 47-55
DOI: 10.1142/S1088424620500509
<https://doi.org/10.1142/S1088424620500509>
179. Balaji Babu, John Mack and Tebello Nyokong
Photodynamic activity of Sn(IV) tetrathien-2-ylchlorin against MCF-7 breast cancer cells †
Dalton Transactions, 50 (2021) 2177–2182
DOI: 10.1039/D0DT03958F
<https://doi.org/10.1039/D0DT03958F>
180. Balaji Babu, John Mack and Tebello Nyokong
Naked Eye and Colorimetric Detection of Cyanide with a 1,3-Diethyl-2-thiobarbituric Acid
Substituted Ferrocene Chemosensor
Chemistry Select 6 (2021) 1448–1452
DOI: 10.1002/slct.202100163
<https://doi.org/10.1002/slct.202100163>
181. Nnaji, Nnaemeka; Nwaji, Njemuwa; Mack, John; Nyokong, Tebello
Ball-type phthalocyanines and reduced graphene oxide nanoparticles as separate and combined
corrosion inhibitors of aluminium in HCl
Journal of Molecular Structure (2021), 1236, 130279
DOI:10.1016/j.molstruc.2021.130279
<https://doi.org/10.1016/j.molstruc.2021.130279>
182. Babu, Balaji; Ochappan, Thivagar; Asraf Ali, Thaslima; Mack, John; Nyokong, Tebello;
Gopalakrishnan Sethuraman, Mathur
Photodynamic activity and photoantimicrobial chemotherapy studies of ferrocene-substituted 2-
thiobarbituric acid
Bioorganic & Medicinal Chemistry Letters (2021), 40, 127922
DOI:10.1016/j.bmcl.2021.127922
<https://doi.org/10.1016/j.bmcl.2021.127922>
183. Babu, Balaji; Mack, John; Nyokong, Tebello
A heavy-atom-free π -extended N-confused porphyrin as a photosensitizer for photodynamic
therapy
New Journal of Chemistry (2021), 45(12), 5654-5658
DOI:10.1039/d1nj00112d
<https://doi.org/10.1039/D1NJ00112D>
184. Niu, Yingjie; Zhu, Weihua; Mack, John; Dubazana, Nadine; Nyokong, Tebello; Fu, Bo; Xu, Haijun;
Liang, Xu
Push-pull type Co(III)corroles: Synthesis, electronic structure and electrochemical catalysis
Journal of Porphyrins and Phthalocyanines (2021) 25, 289-297
DOI:10.1142/s1088424621500279
<https://doi.org/10.1142/S1088424621500279>

185. Feng, Hongjie; Zhou, Zhikuan; May, Aviwe; Chen, Jiaying; Mack, John; Nyokong, Tebello; Gai, Lizhi; Lu, Hua
Disilane-Bridged Architectures with High Optical Transparency for Optical Limiting
Journal of Materials Chemistry C (2021) 9, 6470–6476
DOI:10.1039/d1tc01488a
<https://doi.org/10.1039/D1TC01488A>
186. Sebastian Otieno, Anabel E. Lanterna, John Mack, Solomon Derese, Edith K. Amuhaya, Tebello Nyokong, Juan C. Scaiano
Solar Driven Photocatalytic Activity of Porphyrin Sensitized TiO₂: Experimental and Computational Studies
Molecules 2021, 26, 3131 (1-15)
DOI: 10.3390/molecules26113131
<https://doi.org/10.3390/molecules26113131>
187. Selvaraj Muthusamy, Long Zhao, Kanagaraj Rajalakshmi, Dongwei Zhu, Rodah Soy, John Mack, Tebello Nyokong, Shengjun Wang, Kang-Bong Lee, Weihua Zhu
Turn-on detection of cysteine by a donor-acceptor type quinoline fluorophore: Exploring the Sensing strategy and performance in bioimaging
Dyes and Pigments (2021) 193, 109556 (1-10)
DOI: 10.1016/j.dyepig.2021.109556
<https://doi.org/10.1016/j.dyepig.2021.109556>
188. Aviwe Magadla, Balaji Babu, John Mack and Tebello Nyokong
Positively charged styryl pyridine substituted Zn(II) phthalocyanines for photodynamic therapy and photoantimicrobial chemotherapy: effect of the number of charges
Dalton Transactions (2021), 50, 9129-9136
DOI: 10.1039/D1DT01047F
<https://pubs.rsc.org/en/content/articlehtml/2021/dt/d1dt01047f>
189. Rodah C. Soy, Balaji Babu, John Mack, Tebello Nyokong
The photodynamic activities of the gold nanoparticle conjugates of phosphorus(V) and gallium(III) A₃ meso-triarylcorroles
Dyes and Pigments 194 (2021) 109631 (1-13)
DOI: 10.1016/j.dyepig.2021.109631
<https://doi.org/10.1016/j.dyepig.2021.109631>
190. Bo Fu, Lin Wang, Xiaoxiao Yu, Xianying Fang, John Mack, Somila Dingiswayo, Tebello Nyokong, Xu Liang, Haijun Xu
Borneol-triarylcorrole hybrids with chiral-optical response and anticancer behaviours
Dyes and Pigments 195 (2021) 109699 (1-7)
DOI: 10.1016/j.dyepig.2021.109699
<https://doi.org/10.1016/j.dyepig.2021.109699>
191. S. Yao, L. Gai, L. Jiang, H. Liu, J. Mack, Y. Zhao, K. S. Chan, Z. Shen
Low-Symmetry Porphyrin Analogues with Flexible Open-Form Dithienylethene Moieties: Intense Near IR Q bands
Dyes and Pigments 2021, 192, 109440 (1-7)
DOI: 10.1016/j.dyepig.2021.109440

<http://dx.doi.org/10.1016/j.dyepig.2021.109440>

192. Jackline Khisa, Solomon Derese, John Mack, Edith Amuhaya and Tebello Nyokong
Synthesis, photophysical properties and photodynamic antimicrobial activity of *meso* 5,10,15,20-tetra(pyren-1-yl)porphyrin and its indium(III) complex
Journal of Porphyrins and Phthalocyanines 25 (2021) 794-799
DOI:10.1142/s1088424621500462
<https://doi.org/10.1142/S1088424621500462>
193. Brian Musikavanhu, Selvaraj Muthusamy, Dongwei Zhu, Zhaoli Xue, Qian Yu, Choonzo N. Chiyumba, John Mack, Tebello Nyokong, Shengjun Wang, Long Zhao
A simple quinoline-thiophene Schiff base turn-off chemosensor for Hg²⁺ detection: spectroscopy, sensing properties and applications
Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy 264 (2022) 120338 (1-9)
DOI: 10.1016/j.saa.2021.120338
<https://doi.org/10.1016/j.saa.2021.120338>
194. S. Muthusamy, L. Zhao, K. Rajalakshmi, D. Zhu, S. Wang, J. Mack, K.-B. Lee, L. Zhang, W. Zhu
Quantitative Hg²⁺ Detection via Forming Three Coordination Complexes using a Lysosome Targeting Quinoline - Fisher Aldehyde Fluorophore
Talanta, 236 (2022) 122884 (1-12)
DOI: 10.1016/j.talanta.2021.122884
<https://doi.org/10.1016/j.talanta.2021.122884>
195. Zhu, Weihua; Li, Lihua; Wang, Yu; Mack, John; Dingiswayo, Somila; Nyokong, Tebello; Liang, Xu
Structural modification of RhIIItriarylcorroles for enhanced electrocatalyzed hydrogen evolution reactions
Dyes and Pigments, 199 (2022) 110046 (1-8)
DOI: 10.1016/j.dyepig.2021.110046
<https://doi.org/10.1016/j.dyepig.2021.110046>
196. Dmitry A. Bunin, Nobuhle Ndebele, Alexander G. Martynov, John Mack, Yulia G. Gorbunova and Tebello Nyokong
Low-Symmetry Phthalocyanines Bearing Carboxy-Groups: Synthesis, Spectroscopic and Quantum-Chemical Characterization
Molecules, 27 (2022) 524 (1-17)
DOI: 10.3390/molecules27020524
<https://doi.org/10.3390/molecules27020524>
197. Pinar Sen, John Mack, Tebello Nyokong
Indium phthalocyanines: comparative photophysicochemical properties and photodynamic antimicrobial activities against *Staphylococcus aureus* and *Escherichia coli*
Journal of Molecular Structure 1250 (2022) 131850 (1-9)
DOI: 10.1016/j.molstruc.2021.131850
<https://doi.org/10.1016/j.molstruc.2021.131850>
198. Balaji Babu, John Mack and Tebello Nyokong
A Sn(IV) porphyrin with mitochondria targeting properties for enhanced photodynamic activity against MCF-7 cells†
New Journal Chemistry 46 (2022) 46, 5288–5295
DOI: 10.1039/D2NJ00350C

<https://doi.org/10.1039/D2NJ00350C>

199. Pinar Sen, Rodah Soy, Sithi Mgidlana, John Mack and Tebello Nyokong
Light-driven antimicrobial therapy of palladium porphyrins and their chitosan immobilization derivatives and their photophysical-chemical properties
Dyes and Pigments **203 (2022) 110313 (1-11)**
DOI: 10.1016/j.dyepig.2022.110313
<https://doi.org/10.1016/j.dyepig.2022.110313>
200. Sixolile Centane, Sithi Mgidlana, Yolande Openda, Tebello Nyokong
Electrochemical detection of human epidermal growth factor receptor 2 using an aptamer on cobalt phthalocyanines – Cerium oxide nanoparticle conjugate
Bioelectrochemistry **146 (2022) 108146 (1-10)**
DOI: 10.1016/j.bioelechem.2022.108146
<https://doi.org/10.1016/j.bioelechem.2022.108146>
201. Yolande Ikala Openda, Balaji Babu, Tebello Nyokong
Novel cationic-chalcone phthalocyanines for photodynamic therapy eradication of *S. aureus* and *E. coli* bacterial biofilms and MCF-7 breast cancer
Photodiagnosis and Photodynamic Therapy **38 (2022) 102863 (1-14)**
DOI: 10.1016/j.pdpdt.2022.102863
<https://doi.org/10.1016/j.pdpdt.2022.102863>
202. Dingiswayo, Somila; Burgess, Kristen; Babu, Balaji; Mack, John; Nyokong, Tebello
Photodynamic Antitumor and Antimicrobial Activities of Free-Base Tetra(4-methylthiolphenyl)chlorin and Its Tin(IV) Complex
ChemPlusChem (2022), 87(5), e202200115 (1-7)
DOI: 10.1002/cplu.202200115
<https://doi.org/10.1002/cplu.202200115>
203. James Oyim, Edith Amuhaya, Refilwe Matshitse, John Mack and Tebello Nyokong
Integrated photocatalyst adsorbents based on porphyrin anchored to activated carbon granules for water treatment
Carbon Trends **8 (2022) 100191 (1-11)**
DOI: 10.1016/j.cartre.2022.100191
<https://doi.org/10.1016/j.cartre.2022.100191>
204. Yingjie Niu, Lin Wang, Yingxin Guo, Weihua Zhu, Rodah C. Soy, Balaji Babu, John Mack, Tebello Nyokong, Haijun Xu and Xu Liang
Ga^{III} triarylcorroles with push–pull substitutions: synthesis, electronic structure and biomedical applications
Dalton Transactions **51 (2022) 10543–10551**
DOI: 10.1039/D2DT01262F
<https://doi.org/10.1039/D2DT01262F>
205. Yuqin Wei, Long Zhao, Rui Yuan, Zhaoli Xue, John Mack, Choonzo Chiyumba, Tebello Nyokong, Jianming Zhang
Promotion of Catalytic Oxygen Reduction Reactions: The Utility of Proton Management Substituents on Cobalt Porphyrins
Inorganic Chemistry **61 (2022) 13085–13095**

- DOI: 10.1021/acs.inorgchem.2c01591
<https://pubs.acs.org/doi/pdf/10.1021/acs.inorgchem.2c01591>
206. Nwahara, M. Motaung, G. Abrahams, P. Mashazi, J. Mack, E. Prinsloo, T. Nyokong
Dual singlet oxygen and nitric oxide-releasing silicon phthalocyanine for augmented photodynamic therapy
Materials Today Chemistry 26 (2022) 101201 (1-14)
DOI: 10.1016/j.mtchem.2022.101201
<https://doi.org/10.1016/j.mtchem.2022.101201>
207. MM Ledwaba, NB Magaela, KS Ndlovu, J Mack, T Nyokong, M Managa
Photophysical and *in vitro* photoinactivation of *Escherichia coli* using cationic 5,10,15,20-tetra(pyridin-3-yl) porphyrin and Zn(II) derivative conjugated to graphene quantum dots
Photodiagnosis and Photodynamic Therapy 40 (2022) 103127 (1-12)
DOI: 10.1016/j.pdpdt.2022.103127
<https://doi.org/10.1016/j.pdpdt.2022.103127>
208. Aviwe Khanya May, Choonzo Chiyumba, Jessica Harris, John Mack and Tebello Nyokong
Photodynamic antimicrobial activities of halogenated 3,5-dimethyl- and 1,3,5,7-tetramethyl-*meso*-pentafluorophenyl BODIPY dyes
Journal of Porphyrins and Phthalocyanines 26 (2022) 691–700
DOI: 10.1142/S1088424622500535
<https://doi.org/10.1142/S1088424622500535>
209. Xu Liang, Zi-You Pan, Wenwu Guo, John Mack, Rodah Soy, Tebello Nyokong, Qian-Chong Zhang and Weihua Zhu
Regulating the Single-Molecule Conductance of Corroles by the Substituents on the B-Site
Journal of Physical Chemistry C 126 (2022) 21476–21481
DOI: 10.1021/acs.jpcc.2c07140
<https://doi.org/10.1021/acs.jpcc.2c07140>
210. Nnamdi Nwahara, Garth Abrahams, John Mack, Earl Prinsloo, Tebello Nyokong
A hypoxia responsive silicon phthalocyanine containing naphthquinone axial ligands for photodynamic therapy activity
Journal of Inorganic Biochemistry 239 (2023) 112078 (1-11)
DOI: 10.1016/j.jinorgbio.2022.112078
<https://doi.org/10.1016/j.jinorgbio.2022.112078>
211. Chenming Chan, Jia Li, Jianwei Wu, Youchun Zi, Zhaoli Xue, Mahlatse Ledwaba, John Mack, Tebello Nyokong
An imidazole-based fluorescent probe for the Mercury(II) Ion with rapid response *in vitro*
Dyes and Pigments 213 (2023) 111172 (1-8)
DOI: 10.1016/j.dyepig.2023.111172
<https://doi.org/10.1016/j.dyepig.2023.111172>
212. Zhiheng Qu, Yu Wang, Minzhi Li, Weihua Zhu, John Mack, Nthabeleng Molupe, Tebello Nyokong and Xu Liang
Methylthiophenyl- and methylthiobiphenyl-substituted A₂B co^{III}corroles: modulating electrocatalyzed hydrogen evolution reactions on surface-Modified gold electrodes

Inorganic Chemistry 62 (2023) 4786–4798

DOI: 10.1021/acs.inorgchem.2c03750

<https://doi.org/10.1021/acs.inorgchem.2c03750>

213. Gugu Kubheka, Nthabeleng Molupe, John Mack, and Tebello Nyokong
NIR emitting BODIPY dyes for pH sensing
Journal of Porphyrins and Phthalocyanines 27 (2023) 321–330
DOI: 10.1142/S108842462250095X
<https://doi.org/10.1142/S108842462250095X>
214. Aviwe K. May, John Mack, and Tebello Nyokong
Effect of pyrrole substitution on the optical limiting properties of 3,5-distyrylBODIPYdyes
Journal of Porphyrins and Phthalocyanines 27 (2023) 591–599
DOI: 10.1142/S108842462350044X
<https://doi.org/10.1142/S108842462350044X>
215. Rodah Soy, Balaji Babu, John Mack, and Tebello Nyokong
The Photodynamic Anticancer and Antibacterial Activity Properties of a Series of meso-Tetraarylchlorin Dyes and Their Sn(IV) Complexes
Molecules 28 (2023) 4030 (1-20)
DOI: 10.3390/molecules28104030
<https://doi.org/10.3390/molecules28104030>
216. Reitumetse Nkhahle , Nthabeleng Molupe , John Mack , Tebello Nyokong
Correlating theory with experimental data on the effect of symmetry on the electrocatalytic behaviour of Co phthalocyanines
Inorganica Chimica Acta 554 (2023) 121548 (1-8)
DOI: 10.1016/j.ica.2023.121548
<https://doi.org/10.1016/j.ica.2023.121548>
217. Pinar Sen, Azole Sindelo, Nnaemeka Nnaji, John Mack and Tebello Nyokong
Diiodinated Mono- and Dipyridylvinyl BODIPY Dyes: Photophysicochemical Properties, *in vitro* Antibacterial Studies, Molecular
Photochemistry and Photobiology, 2023, 99: 947–956
DOI: 10.1111/php.13698
<https://doi.org/10.1111/php.13698>
218. Balaji Babu, John Mack and Tebello Nyokong
Sn(IV)-porphyrinoids for photodynamic anticancer and antimicrobial chemotherapy
Dalton Transactions 52 (2023) 5000–5018
DOI: 10.1039/d3dt00603d
<https://doi.org/10.1039/D3DT00603D>
219. Gugu Kubheka, Estela Climent, Charlie Tobias, Knut Rurack, John Mack and Tebello Nyokong
Multiplexed Detection of Human Papillomavirus Based on AzaBODIPY-Doped Silica-Coated Polystyrene Microparticles
Chemosensors 11, 1 (2023) 1-22
DOI: 10.3390/chemosensors11010001
<https://doi.org/10.3390/chemosensors11010001>
220. Somila Dingiswayo, Balaji Babu, Kristen Burgess, John Mack and Tebello Nyokong

Photodynamic Anticancer and Antibacterial Activities of Sn(IV) N-Confused *Meso*-tetra(methylthiophenyl)porphyrin

Photochem 3, (2023) 313–326

DOI: 10.3390/photochem3030019

<https://doi.org/10.3390/photochem3030019>

221. Rodah Soy, Balaji Babu, John Mack and Tebello Nyokong

The photodynamic activity properties of a series of structurally analogous tetraarylporphyrin, chlorin and N-confused porphyrin dyes and their Sn (IV) complexes

Photodiagnosis and Photodynamic Therapy 44 (2023) 103815 (1-12)

DOI: 10.1016/j.pdpdt.2023.103815

<https://doi.org/10.1016/j.pdpdt.2023.103815>

222. Changan Ji, Jie Yang, Siyi Hu, John Mack, Yongbo Zhang, Hua Lu, Lizhi Gai

Pyrrole hemithioindigo-derived organoboron complexes: Synthesis, photophysical properties and its bioimaging applications

Dyes and Pigments 220 (2023) 111707 (1-8)

DOI: 10.1016/j.dyepig.2023.111707

<https://doi.org/10.1016/j.dyepig.2023.111707>

CONFERENCE PROCEEDINGS:

J. Mack, B. Babu, S. Dingiswayo, R. Soy, T. Tasso, M. Baptista, T. Nyokong

Sn(IV) porphyrins for photodynamic therapy: progress to date and future perspectives

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CONFERENCE PRESENTATIONS:

Symposium Lectures

1. M. J. Stillman, J. Mack and E. A. Ough, "Theoretical Aspects of the Interpretation of the Optical Data of Metallophthalocyanines", First International Conference on Porphyrins and Phthalocyanines, Dijon, France, Jun 25th - 30th **2000**.
2. M. J. Stillman and J. Mack, "Analysis of the Absorption and Magnetic Circular Dichroism Spectroscopy of Neutral, and the Radical Cations and Anions of Metallophthalocyanines", Second International Conference on Porphyrins and Phthalocyanines, Kyoto, Japan, Jun 30th - July 5th **2002**.
3. J. Mack and M. J. Stillman, "Theoretical Interpretation of the Optical Spectra of Phthalocyanines by ZINDO and DFT Techniques", Second International Conference on Porphyrins and Phthalocyanines, Kyoto, Japan, Jun 30th - Jul 5th **2002**.

4. M. J. Stillman and J. Mack, "Magnetic circular dichroism: a powerful tool to understand the electronic structures of porphyrins and phthalocyanines", Third International Conference on Porphyrins and Phthalocyanines, New Orleans, Louisiana, Jul 11th - 16th **2004**.
5. M. J. Stillman, J. Mack and N. Kobayashi, "Theoretical aspects of porphyrin and phthalocyanine spectroscopy" Fourth International Conference on Porphyrins and Phthalocyanines, Rome, Italy, Jul 2nd - 7th **2006**.
6. J. Mack, Y. Shimizu, M. Bunya, M. J. Stillman, N. Ono and N. Kobayashi, "MCD spectroscopy and the effect of porphyrinoid ligand saddling: core modified tetrabenzoporphyrins" Fourth International Conference on Porphyrins and Phthalocyanines, Rome, Italy, Jul 2nd - 7th **2006**.
7. J. Mack, Y. Shimizu, M. Bunya, M. J. Stillman, N. Ono and N. Kobayashi, "MCD spectroscopy and the effect of porphyrinoid ligand saddling: core modified tetrabenzoporphyrins", 1st Georgian Bay International Conference on Bioinorganic Chemistry, Parry Sound, Canada, May 22nd - 25th **2007**.
8. M. J. Stillman, M. Pluym, J. Mack, C. L. Vermeiren and D. E. Heinrichs, "Heme coordination properties in *Staphylococcus aureus* Isd proteins from magnetic circular dichroism spectroscopy", 1st Georgian Bay International Conference on Bioinorganic Chemistry, Parry Sound, Canada, May 22nd - 25th **2007**.
9. J. Mack, M. Bunya, Y. Shimizu, H. Uno, M. J. Stillman, N. Ono and N. Kobayashi, "MCD spectroscopy and the effect of porphyrinoid ligand saddling: core modified tetrabenzoporphyrins", Fifth International Conference on Porphyrins and Phthalocyanines, Moscow, Russia, Jul 6th - 11th **2008**.
10. J. Mack, M. Bunya, Y. Shimizu, H. Uno, M. J. Stillman, N. Ono and N. Kobayashi, "The MCD spectroscopy of non-planar porphyrinoids" JSPS Global COE Symposium on Functional Materials and Analytical Approaches for Molecular Complex Chemistry, Sendai, Japan, Nov 5th - 6th **2008**.
11. J. Mack, "Modelling of spectra", JSPS/NRF Joint Research Project Workshop on Understanding Spectra of Macrocyclic Compounds: linking experiments with theoretical calculations, Rhodes University, Grahamstown, South Africa, Feb 10th - 11th **2009**.
12. J. Mack, N. Kobayashi and M. J. Stillman, "MCD spectroscopy and TD-DFT calculations", 2nd Georgian Bay International Conference on Bioinorganic Chemistry, Parry Sound, Canada, May 26th - 29th **2009**.
13. J. Mack, M. J. Stillman and N. Kobayashi, "MCD spectroscopy and TD-DFT calculations", Sixth International Conference on Porphyrins and Phthalocyanines, Albuquerque, New Mexico, Jul 4th - 9th **2010**.
14. J. Mack, G. Kubheka, C. Mkhize, J. Stone, M. Wildervanck and T. Nyokong, "TD-DFT Calculations and MCD Spectroscopy: Analysis of the Structure-Property Relationships of Porphyrinoids", Michinoku International Symposium on Porphyrins, Phthalocyanines and Functional π -Molecules, Zao, Japan, Oct 13th - 16th **2014**.
15. J. Mack, "TD-DFT Calculations and MCD Spectroscopy: Analysis of the Structure-Property Relationships of Porphyrinoids", The 3rd National Symposium on Porphyrin Chemistry, Fuzhou, China, Dec 18th - 20th **2015**.
16. J. Mack, "Optical limiting and singlet oxygen generation properties of phosphorus triazatetrabenzocorroles", Annual Research Symposium, Key Laboratory of Organosilicon Chemistry and Material Technology, Ministry of Education, Hangzhou Normal University, Hangzhou, China, Dec 22nd **2015**.

Invited/Keynote Speaker

1. J. Mack, "MCD spectroscopy and TD-DFT Calculations of Porphyrinoids", Department of Chemistry, Rhodes University, Grahamstown, South Africa, Jun 3rd **2010**.
2. J. Mack, "Magnetic circular dichroism (MCD) spectroscopy and TD-DFT calculations of aromatic macrocycles", State Key Laboratory of Coordination Chemistry, Nanjing National Laboratory of Microstructures, School of Chemistry and Chemical Engineering, Nanjing University, Nanjing, Nov 26th **2012**.
3. J. Mack, "Magnetic circular dichroism (MCD) spectroscopy and TD-DFT calculations of aromatic macrocycles", Key Laboratory of Organosilicon Chemistry and Material Technology Ministry of Education, Hangzhou Normal University, Hangzhou, China, Nov 27th **2012**.
4. J. Mack, "Analysis and rational design of near IR region dyes for biomedical and sensor applications", School of Chemistry and Chemical Engineering, Jiangsu University, Zhenjiang, China, Dec 18th **2013**.
5. J. Mack, "Analysis and rational design of near IR region dyes for biomedical and sensor applications", Key Laboratory of Organosilicon Chemistry and Material Technology Ministry of Education, Hangzhou Normal University, Hangzhou, China, Dec 20th **2013**.
6. J Mack, G Kubheka, J Harris, J Stone, Z Hlatshwayo, AK May, N Molupe, N Ndebele, BP Ngoy, T Nyokong
Optical limiting properties of π -extended BODIPY and azaBODIPY dyes at 532nm
10th International Conference On Porphyrins And Phthalocyanines (ICPP-10), Munich, Germany, 1-6 July **2018**
7. Prof John Mack Gugu Kubheka, Aviwe K. May, Nadine Dubazana, Nobuhle Ndebele, Bokolombe P. Ngoy and Tebello Nyokong "Optical limiting properties of azaBODIPY and BODIPY dyes on the nanosecond timescale" 11th International Conference on Porphyrins & Phthalocyanines (ICPP-11) 28th June to 3rd July **2021** (Virtual Meeting)
8. Prof John Mack "Rational structural modification of porphyrins: NIR absorbing photosensitizer dyes for biomedical applications" 12th International Conference on Porphyrins & Phthalocyanines (ICPP-12), Madrid, Spain 10-15 July **2022**
9. Prof John Mack "Coordinated Porphyrinoids as Photosensitizers for Photodynamic Anticancer and Antimicrobial Chemotherapy" 5th Annual Conference of the Faculty of Science and Technology, University of Nairobi, Kenya 26 – 28 Oct **2022** (via zoom)

Oral Presentations

1. M. J. Stillman, J. Mack, S. Radzki and E. A. Ough, "Photochemical and Electrochemical Oxidation and Reduction of Metallophthalocyanines", The 7th Great Lakes Symposium in Photochemistry, University of Western Ontario, London, Ontario, May 3rd - 6th **1990**.
2. J. Mack and M. J. Stillman, "Spectroelectrochemistry of Magnesium Phthalocyanine Anions", The Eighth Annual Chemistry Graduate Student Symposium, State University of New York at Buffalo, May 23rd - 24th **1990**.
3. J. Mack and M. J. Stillman, "Photoreduction of Free Base and Metallophthalocyanines", The 25th Great Lakes ACS Regional Meeting, Marquette University, Milwaukee, Wisconsin, Jun 1st - 3rd **1992**.

4. M. J. Stillman, E. A. Ough and J. Mack, "Studies on Ring Oxidation and Ring Reduction in Phthalocyanines and Porphyrins by Magnetic Circular Dichroism Spectroscopy", The 38th Canadian Spectroscopy Conference, Trent University, Peterborough, Ontario, Aug 10th - 12th **1992**.
5. J. Mack and M. J. Stillman, "MCD Spectroscopy of Metal Phthalocyanine Anions", The 80th Canadian Chemical Conference and Exhibition, Windsor, Ontario, Jun 1st - 4th **1997**.
6. J. Mack and M. J. Stillman, "MCD Spectroscopy of Metal Phthalocyanine Anions", The 80th Canadian Chemical Conference and Exhibition, Windsor, Ontario, Jun 1st - 4th **1997**.
7. J. Mack and M. J. Stillman, "Photoreduction of Metal Phthalocyanine Complexes", Great Lakes Photochemistry Symposium, University of Western Ontario, London, Ontario, Jun 6th - 8th **1997**.
8. J. Mack, M. J. Stillman and N. Kobayashi, "The Application of Magnetic Circular Dichroism Spectroscopy to Sterically Hindered Non-Planar Porphyrin Ring Systems", The 87th Canadian Chemical Conference and Exhibition, London, Ontario, May 29th - Jun 1st **2004**.
9. J. Mack, M. J. Stillman and N. Kobayashi, "The Application of Magnetic Circular Dichroism Spectroscopy to Sterically Hindered Non-Planar Porphyrin Ring Systems", Third Midwest Metals Meeting, Ann Arbor, Michigan, Jun 4th - 6th **2004**.
10. J. Mack, N. Kobayashi and M. J. Stillman, "The application of magnetic circular dichroism spectroscopy to sterically hindered non-planar porphyrin ring systems", Third International Conference on Porphyrins and Phthalocyanines, New Orleans, Louisiana, Jul 11th - 16th **2004**.
11. J. Mack, "TD-DFT Calculations and MCD Spectroscopy: Ring-contracted, Fused-ring-expanded and Core Modified Porphyrinoids", Seventh International Conference on Porphyrins and Phthalocyanines, Jeju ICC, Korea, Jul 1st - 6th **2012**.
12. J. Mack, "The rational design of red/NIR region BODIPY dyes for sensor applications and PDT", 41st National Convention of the South African Chemical Institute, East London, South Africa, Dec 1st - 6th **2013**.
13. J. Mack, N. Kobayashi and Z. Shen, "TD-DFT Calculations and MCD Spectroscopy: identification of trends in the electronic structures and optical spectra of porphyrinoids", Eighth International Conference on Porphyrins and Phthalocyanines, Istanbul, Turkey, Jun 22nd - 27th **2014**.
14. J. Mack, G. Kubheka, C. Mkhize, J. Stone, M. Wildervanck and T. Nyokong, "TD-DFT Calculations and MCD Spectroscopy: Analysis of the Structure-Property Relationships of Porphyrinoids", The 17th SACI Inorganic Chemistry Conference, Grahamstown, South Africa, Jun 28th - Jul 2nd **2015**.
15. P. Majumdar, J. Zhao, J. Mack, Z. Shen and T. Nyokong, "Ir(III) Complexes Showing NIR Absorption/Emission For Application As Photodynamic Materials", The 17th SACI Inorganic Chemistry Conference, Grahamstown, South Africa, Jun 28th - Jul 2nd **2015**.
16. J. Mack, C. Mkhize, G. Kubheka, J. Britton, Z. Shen and T. Nyokong, "Optical limiting and singlet oxygen generation properties of phosphorus triazatetrazabenzcorroles", Organometallic and Coordination Chemistry: Achievements and Challenges, Nizhny Novgorod, Russia, Sep 18th - 23rd **2015**.
17. M. Wildervanck, J. Mack and T. Nyokong, "Upconversion Nanoparticle-BODIPY conjugates for NIR activated singlet oxygen generation", 6th Annual DST/Mintek NIC Workshop, Grahamstown, South Africa, Oct 28th - 29th **2015**.
18. J. Mack, P. Majumdar, J. Harris, L. Gai, M. Shi, T. Nyokong, Z. Shen, "Rational design, synthesis and properties of non-benzo fused-ring-expanded phthalocyanines and aza-BODIPYs", Ninth International Conference on Porphyrins and Phthalocyanines, Nanjing, China, Jul 3rd - 8th **2016**.

19. J. Mack, P. Majumdar, J. Harris, L. Gai, M. Shi, T. Nyokong, Z. Shen, "Rational design, synthesis and properties of non-benzo fused-ring-expanded phthalocyanines and aza-BODIPYs", Twentieth Mendeleev Congress, Yekatarinburg, Russia, Sep 25th - 29th **2016**.
20. J. Mack, B. Babu, S. Dingiswayo, R. Soy, T. Tasso, M. Baptista, T. Nyokong
Rational design of Sn(IV) porphyrins for photodynamic therapy: progress to date and future perspectives
2020 Centre for High Performance Computing National Convention, Cape Town, Nov 30th – Dec 2nd 2020.
21. Mack, B. Babu, S. Dingiswayo, R. Soy, T. Tasso, M. Baptista, T. Nyokong
Rational design of Sn(IV) porphyrins for photodynamic therapy: progress to date and future perspectives
2020 Centre for High Performance Computing National Convention, Cape Town, Nov 30th – Dec 2nd 2020.
22. John Mack Gugu Kubheka, Aviwe K. May, Nadine Dubazana, Nobuhle Ndebele, Bokolombe P. Ngoy and Tebello Nyokong
Optical limiting properties of azaBODIPY and BODIPY dyes on the nanosecond timescale
11th International Conference on Porphyrins & Phthalocyanines (ICPP-11)
Hyatt Regency Buffalo/Hotel and Conference Center, Buffalo, New York, USA - 28th June to 3rd July 2021 (Virtual Meeting)
23. John Mack
Invited Speaker
Rational structural modification of porphyrins: NIR absorbing photosensitizer dyes for biomedical applications
12th International Conference on Porphyrins & Phthalocyanines (ICPP-12)
Madrid, Spain 10-15 July 2022
24. Prof. MACK, John; Dr BABU, Balaji; Dr MAY, Aviwe; Ms SOY, Rodah; Mr DINGISWAYO, Somila; Ms CHIYUMBA, Choonzo; Ms BURGESS, Kristen; Prof. NYOKONG, Tebello
Rational design of porphyrinoid dyes for photodynamic therapy: further progress and future perspectives
Centre for High Performance Computing 2022 National Conference
30 Nov 2 Dec, Gauteng, CSIR (via zoom meeting)
25. John Mack, Balaji Babu, Rodah Soy, Nthabeleng Molupe, Somila Dingiswayo and Tebello Nyokong
Group 13-15 Coordinated Porphyrinoids as Photosensitizers for Photodynamic Anticancer and Antimicrobial Chemotherapy
2nd BRICS Workshop on Biophotonics May 16 –18, **2023**, SARATOV, RUSSIA (via zoom)

Posters

26. J. Mack and M. J. Stillman, "Spectroelectrochemistry of Magnesium Phthalocyanine Anions", The 23rd Inorganic Discussion Weekend, University of Waterloo, Ontario, Nov 16th - 18th **1990**.
27. J. Mack and M. J. Stillman, "Spectroelectrochemistry of Magnesium Phthalocyanine Anions", The 74th Canadian Chemical Conference and Exhibition, Hamilton, Ontario, Jun 2nd - 6th **1991**.

28. M. J. Stillman, J. Mack and E. A. Ough, "Magnetic Circular Dichroism Spectroscopy of Phthalocyanine Anion Radicals and Cation Radicals", The 41st International Conference on Analytical Sciences and Spectroscopy, University of Windsor, Ontario, Aug 14th - 16th **1995**.
29. J. Mack and M. J. Stillman, "MCD Spectroscopy of Phthalocyanine Anions", The 42nd International Conference on Analytical Sciences and Spectroscopy, University of Western Ontario, Ontario, Aug 11th - 13th **1996**.
30. J. Mack and M. J. Stillman, "Molecular Orbital Calculations of the Optical spectra of Metal Phthalocyanine Complexes and Ring Oxidized and Reduced Species", The 80th Canadian Chemical Conference and Exhibition, Windsor, Ontario, Jun 1st - 4th **1997**.
31. J. R. Bolton, A. Safarzadeh-Amiri, S. R. Cater, B. W. Dussert, M. I. Stefan and J. Mack, "Mechanism and efficiency of the degradation of MTBE by the UV/H₂O₂ process", Southwest Focused Ground Water Conference, Anaheim, California, Jun 3rd - 4th **1998**.
32. J. Mack and J. R. Bolton, "The Impact of NO₂⁻ and NO₃⁻ on UV/H₂O₂ Processes", 1998 Pan-American Workshop on Commercialization of Advanced Oxidation Technologies, London, Ontario, Jun 27th - 30th **1998**.
33. M. I. Stefan, J. R. Bolton, A. Safarzadeh-Amiri, J. Mack, S. R. Cater and B. W. Dussert, "Degradation Pathways during the Phototreatment of Methyl-*tert*-Butyl Ether by the UV/H₂O₂ Advanced Oxidation Process", 1998 Pan-American Workshop on Commercialization of Advanced Oxidation Technologies, London, Ontario, Jun 27th - 30th **1998**.
34. M. I. Stefan, J. R. Bolton, A. Safarzadeh-Amiri, J. Mack, S. R. Cater and B. W. Dussert, "Degradation Pathways during the Phototreatment of Methyl-*tert*-Butyl Ether by the UV/H₂O₂ Advanced Oxidation Process", IUPAC Symposium on Photochemistry, Barcelona, Spain, Jul 19th - 24th **1998**.
35. J. Mack and M. J. Stillman, "Magnetic Circular Dichroism Spectroscopy of Metal Phthalocyanine and Metal Porphyrin Anion Radical Species", First International Conference on Porphyrins and Phthalocyanines, Dijon, France, Jun 25th - 30th **2000**.
36. J. Mack, T. Nyokong and M. J. Stillman, "Magnetic Circular Dichroism Spectroscopy and INDO/s Calculations of Ruthenium Phthalocyanine", Second International Conference on Porphyrins and Phthalocyanines, Kyoto, Japan, Jun 30th - Jul 5th **2002**.
37. J. Mack, S. P. Keizer, B. Bench, S. Gorun and M. J. Stillman, "Optical Spectroscopy and electronic structure of 1,4,8,11,15,18,22,25-octafluoro-2,3,9,10,16,17,23,24-octaperfluoroisopropyl zinc phthalocyanine", Third International Conference on Porphyrins and Phthalocyanines, New Orleans, Louisiana, Jul 11th - 16th **2004**.
38. M. J. Stillman, J. Mack, C. Vermeiren and D. E. Heinrichs, "Characterization of heme scavenging pathogen cell wall proteins by MCD and ESI-MS techniques", Third International Conference on Porphyrins and Phthalocyanines, New Orleans, Louisiana, Jul 11th - 16th **2004**.
39. C. L. Vermeiren, S. E. Dale, J. Mack, M. J. Stillman and D. E. Heinrichs, "Characterization of iron-regulated surface determinants from *Staphylococcus aureus*", 11th International Symposium on Staphylococci and Staphylococcal Infections. Charleston, SC. Oct 24th - 27th **2004**.
40. J. Mack, S. P. Keizer, B. Bench, S. Gorun and M. J. Stillman, "Optical Spectroscopy and electronic structure of 1,4,8,11,15,18,22,25-octafluoro-2,3,9,10,16,17,23,24-octaperfluoroisopropyl zinc phthalocyanine", The 2nd International COE Symposium, Sendai, Japan, Nov 22nd - 23rd **2004**.
41. M. J. Stillman, J. Mack, M. Pluym, C. Vermeiren and D. E. Heinrichs, "Magnetic circular dichroism study of the heme scavenging Isd proteins of *Staphylococcus aureus*", 12th International Conference on Biological Inorganic Chemistry, Ann Arbor, Michigan, Jul 31st - Aug 5th **2005**.

42. J. Mack, N. Kobayashi and M. J. Stillman, "MCD spectroscopy and TD-DFT calculations of Metal Porphyrinoids", 12th International Conference on Biological Inorganic Chemistry, Ann Arbor, Michigan, Jul 31st - Aug 5th **2005**.
43. J. Mack, N. Kobayashi and M. J. Stillman, "MCD spectroscopy and TD-DFT calculations of metal phthalocyanine anion and cation radical species" Fourth International Conference on Porphyrins and Phthalocyanines, Rome, Italy, Jul 2nd - 7th **2006**.
44. M. Pluym, C. L. Vermeiren, J. Mack, D. E. Heinrichs and M. J. Stillman, "Spectroscopic study of the Isd heme-scavenging proteins IsdA and IsdE of *Staphylococcus aureus*." Fourth International Conference on Porphyrins and Phthalocyanines, Rome, Italy, Jul 2nd - 7th **2006**.
45. A. Senior, J. Mack, N. Kobayashi and M. J. Stillman, "π-cation radical porphyrinoids: Progress towards the assignment of the optical spectrum." Fourth International Conference on Porphyrins and Phthalocyanines, Rome, Italy, Jul 2nd - 7th **2006**.
46. C. L. Vermeiren, M. Pluym, J. Mack, D. E. Heinrichs and M. J. Stillman, "Characterization of the heme binding properties of iron-regulated surface determinant A (Isd A) from *Staphylococcus aureus*" Biometals 2006, Portland, Oregon, Jul 30th - Aug 6th **2006**.
47. W. Chidawanyika, S. Shimizu, J. Mack, N. Kobayashi and T. Nyokong, "Innovations in the development of low symmetry phthalocyanine derivatives", Fifth International Conference on Porphyrins and Phthalocyanines, Moscow, Russia, Jul 6th - 11th **2008**.
48. M. Kon-no, J. Mack, N. Kobayashi and T. Shinmyozu, "Electronic structures of tetrathiaporphyrin dication", 24th International Symposium on the Organic Chemistry of Sulfur, Florence, Italy, Jul 25th - 30th **2010**.
49. S. Sugawara, S. Kojima, Y. Yamamoto, J. Mack, N. Kobayashi, Z. Fu, K. M. Kadish, Y. M. Sung, K. S. Kim and D. Kim, "Synthesis, Characterization and Spectroscopic Analysis of Anti-aromatic 16 π Benzofused Metalloporphyrin", Seventh International Conference on Porphyrins and Phthalocyanines, Jeju ICC, Korea, Jul 1st - 6th **2012**.
50. G. Kubheka, E. Amuhaya, J. Mack and T. Nyokong, "Synthesis, photophysical properties of hexabromoanilinoBODIPY dye-gold nanorods conjugate for use in Antimicrobial Photodynamic Therapy and TDDFT calculation of the aniline BODIPY dyes", The 17th SACI Inorganic Chemistry Conference, Grahamstown, South Africa, Jun 28th - Jul 2nd **2015**.
51. J. Stone, J. Mack and T. Nyokong, "Iodinated BODIPY dyes and their potential as photocatalysts", The 17th SACI Inorganic Chemistry Conference, Grahamstown, South Africa, Jun 28th - Jul 2nd **2015**.
52. M. Wildervanck, J. Mack and T. Nyokong, "Upconversion Nanoparticle-BODIPY conjugates for NIR activated singlet oxygen generation", The 17th SACI Inorganic Chemistry Conference, Grahamstown, South Africa, Jun 28th - Jul 2nd **2015**.
53. J. Stone, J. Mack and T. Nyokong, "Iodinated BODIPY dyes and their potential as photocatalysts", 6th Annual DST/Mintek NIC Workshop, Grahamstown, South Africa, Oct 28th - 29th **2015**.
54. M. Wildervanck, J. Mack and T. Nyokong, "Upconversion Nanoparticle-BODIPY conjugates for NIR activated singlet oxygen generation", 6th Annual DST/Mintek NIC Workshop, Grahamstown, South Africa, Oct 28th - 29th **2015**.
55. X. Liang, Y. Jiang, M. Li, J. Mack and W. Zhu, "Facile Modulation the Hydrogen Evolutions by A₂B Type Cu(III)Corroles Containing Different Fluoro-Atoms", Ninth International Conference on Porphyrins and Phthalocyanines, Nanjing, China, Jul 3rd - 8th **2016**.

56. X. Liang, Y. Jiang, M. Li, J. Mack and W. Zhu, "Halogenated A₂B type Co(III)corroles: Synthesis, Properties and Modulation Hydrogen Evolution Reactions", Ninth International Conference on Porphyrins and Phthalocyanines, Nanjing, China, Jul 3rd - 8th **2016**.
57. X. Liang, M. Li, J. Mack, N. Kobayashi and W. Zhu, "Synthesis and Electronic Structure of Zinc(II) Porphyrin Dimers with a Bridging Amide-Bonded Xanthene Moiety", Ninth International Conference on Porphyrins and Phthalocyanines, Nanjing, China, Jul 3rd - 8th **2016**.
58. T. Huang, X. Liang, M. Li, J. Mack and W. Zhu, "The First Example of Electrocatalyzed Full Dechlorination of DDT electrocatalyzed by Lipophilic Co(II)Pc", Ninth International Conference on Porphyrins and Phthalocyanines, Nanjing, China, Jul 3rd - 8th **2016**.
59. Dr John Mack, Dr Balaji Babu, Ms Rodah Soy, Mr James Oyim, Prof Edith Amuhaya, Prof Tebello Nyokong
The use of Gaussian 09 to identify trends in the optical properties and electronic structures of porphyrin and BODIPY dye
2018 CHPC National Conference, Cape Town, South Africa 2-6 Dec 2018